Q-See®

H.264 Dual Stream Network DVR

16 Channel CIF@480fps & D1@120fps Digital Video Recorder

USER MANUAL

Model #:

QT426

www.q-see.com

Rev 5/27/2010

Please contact a Q-See support representative first regarding any additional information you need help with regarding product features, specification or assistance with setup.

Please contact us using the following methods with questions about your Q-See product.

Q-See Products

8015 E. Crystal Dr.
Anaheim, CA 92807

Email:

Customer Service
cs@dpsi-usa.com

Technical Support
ts@dpsi-usa.com

Online Live Web Chat Visit:
www.q-see.com

Telephone:

Customer Service
1.877.998.3440 x 538

Technical Support
1.877.998.3440 x 539

Fax:
1.714.998.3509

1. **Electrical Safety**

   All installation and operation should conform to your local electrical safety codes.

   We assume no liability or responsibility for any fires or electrical shock caused by improper handling or installation.

2. **Transportation Security**

   Avoid heavy stress, violent vibrations or contact with water during transportation, storage and installation of this system.

3. **Installation**

   Keep upright. Handle with care.

   Do not provide power to the DVR prior to completing installation.

   Do not place objects on the DVR.

4. **Qualified Service Technicians**

   Any examination and repair work should be done only be a qualified service engineer.

   We are not liable for any problems caused by unauthorized modifications or attempted repairs.

5. **Environment**

   This product works in a temperature range of 14°F to 131°F (-10°C to 55°C)

   This combo DVR should be installed in a cool, dry place away from direct sunlight and flammable or explosive substances, etc.

6. **Accessories**

   Make sure to only use accessories recommended by Q-See.

   Before installation, check the package to verify that all the components are included.

   Contact your local retailer ASAP if something is broken in your package.

CAUTION!

RISK OF ELECTRICAL SHOCK!

Thank You for Choosing a Q-See Product!

All of our products are backed by a conditional service warranty covering all hardware for 12 months from the date of purchase. Additionally, our products also come with a free exchange policy that covers all manufacturing defects for one month from the date of purchase. Permanent upgrading service is provided for the software.

Liability Exclusions:

Any product malfunction or abnormalities in operation or damage caused by the following reasons are not within the free service scope of our company:

(1) Equipment damage caused by improper operation.

(2) Improper equipment operation environment and conditions (e.g., improper power, extreme environmental temperatures, humidity, lightning and sudden surges of electricity).

(3) Damage caused by acts of nature (e.g., earthquake, fire, etc).

(4) Equipment damage caused by the maintenance of personnel not authorized by Q-See.

(5) Product sold over 12 months ago.

In order to fulfill the terms of your warranty, you must complete the registration process after purchasing our product. To do this, simply fill out the User's Information Card below and fax or mail it in to us at the information listed below. You can also register the product by going to the www.q-see.com website and clicking on the Register link.

Customer Information Card

User's Name	**Mr./Mrs.**
Company Name	
Postal Address	
Postal code	
Phone Number	
E-mail	
Model Number of Product	
Serial Number of Product	
Purchase Date	
Distributor	

The material in this document is the intellectual property of Q-See.

No part of this manual may be reproduced, copied, translated, transmitted, or published in any form or by any means without our company's expressed written consent.

1. Our products are under continual improvement and we reserve the right to make changes without notice. No guarantee is given as to the correctness of its contents.
2. We do not accept any responsibility for any harm caused by using our product.
3. The product picture may differ from the actual product, which is only for your reference. The accessories may be different according to the region you purchased our product. For more information on specific accessories, please contact your local distributor.

Copyright Reserved

TABLE OF CONTENTS

1. INTRODUCTION 6
1.1 DVR Introduction 6
1.2 Main Features 6
2. GETTING STARTED 8
2.1 Installing Hard Drive 8
2.2 Front Panel Instructions 9
2.3 Rear Panel Instructions 10
2.4 Remote Control 11
2.5 Control with Mouse 12
2.5.1 Connect Mouse 12
2.5.2 Use Mouse 12
3. BASIC FUNCTION 14
3.1 Power On/Off 14
3.1.1 Power On 14
3.1.2 Power Off 14
3.2 Login 15
3.3 Live Preview 15
3.3.1 Live Playback 16
4. MAIN MENU SETUP GUIDE 17
4.1 Basic Configuration 18
4.1.1 Setup 18
4.1.2 Time & Date 19
4.1.3 DST 19
4.2 Live Configuration 20
4.2.1 Live 20
4.2.2 Host Monitor 21
4.2.3 SPOT 21
4.2.4 Mask 22
4.3 Record Configuration 23
4.3.1 Enable 23
4.3.2 Record stream 24
4.3.3 Time 25
4.3.4 Recycle Record 25
4.3.5 Stamp 26
4.4 Schedule Configuration 27
4.4.1 Schedule 27
4.4.2 Motion 28
4.4.3 Sensor 28

4.5 Alarm Configuration 29
4.5.1 Sensor (to setup optional external motion sensors) 29
4.5.2 Motion 31
4.5.3 Video Loss 33
4.5.4 Other Alarm 33
4.5.5 Alarm Out 34
4.6 Network Configuration 35
4.6.1 Network 35
4.6.2 Network Stream 36
4.7 User Management Configuration 37
4.8 P.T.Z configuration 39
5. RECORD, SEARCH, PLAYBACK AND BACKUP 43
5.1 Time Search 43
5.2 Event Search 44
5.3 File Manager 44
5.4 Backup 45
6. DVR MANAGEMENT 47
6.1 Checking System Information 47
6.1.1 System Information 47
6.1.2 Event Information 47
6.1.3 Log Information 48
6.1.4 Network information 48
6.1.5 Online Information 49
6.1.6 Manual Alarm 49
6.1.7 Disk Manager 49
6.1.8 Upgrade 50
6.1.9 Logoff 50
7. REMOTE SURVEILLANCE 51
7.1 Network Access 51
7.2 Setting Up Remote Access 51
7.3 Port Forwarding 60
7.4 Setting Up Internet Explorer 61
7.5 Using the Remote Access Software 63
7.6 Remote Playback and Backup 66
7.6.1 Remote Playback 66
7.6.2 Remote Backup 70
7.7 Remote System Configuration 71
8. MOBILE SURVEILLANCE 72

8.1 Phones with Windows Mobile Pro 72
8.2 Phones with Symbian 74
8.3 For iPhone Mobile Clients 76
9. PRODUCT SPECIFICATIONS 81
APPENDIX A: FAQ's 82
APPENDIX B: CALCULATE RECORDING CAPACITY 84
APPENDIX C: COMPATIBLE USB DRIVES 85

1. INTRODUCTION

1.1 DVR Introduction

This DVR uses high performance video processing chips and an embedded Linux system. It utilizes many advanced technologies, such as standard H.264 with low bit rate, Dual Stream, SATA interface and VGA output. This DVR system supports mouse controlled navigation and also can be accessed through IE browser with full remote control, mobile viewing by cell phones, etc. This is an advanced technology DVR system which utilizes cutting edge technology functions without compromising the stability of the system. It is ideally suited for use in such industries as banking, telecommunication, transportation, factories, warehouses, etc.

1.2 Main Features

COMPRESSION FORMAT

- Standard H.264 compression with low bit rate and high image quality

LIVE SURVEILLANCE

- Supports HD VGA output
- Supports channel security by hiding live display
- Displays the local record state and basic information
- Supports full control with USB mouse

RECORDING MEDIA

- Supports one SATA HDD up to 2TB to record for a long time periods.

BACKUP

- Supports backing up to USB 2.0 devices
- Supports saving recorded files with AVI format to a remote computer through internet

RECORDING & PLAYBACK

- Record modes: Manual, Schedule, Motion detection and Sensor alarm recording
- Supports recycle after HDD is full
- Resolution, frame rate and picture quality are adjustable
- 128MB for every video file packaging
- 4 audio channels available
- Two record search modes: time search and event search
- Supports 4/8/16 screen playback simultaneously
- Supports deleting and locking the recorded files one by one
- Supports remote playback in Network Client through LAN or internet

ALARM

- 1 channel alarm output and 16 channel alarm input available
- Supports scheduling for motion detection and sensor alarm
- Supports pre-recording and post recording
- Supports linked channels recording once motion or alarm is triggered on designated channel
- Supports linked PTZ preset, auto cruise and track of the corresponding channel

PTZ CONTROL

- Supports multiple PTZ protocols (PelcoP, PelcoD, LILIN, MINKING, NEON, STAR, VIDO, DSCP, VISCA, and RANGE)
- Supports 128 PTZ presets and 8 auto cruise tracks
- Supports remote PTZ control through internet

SECURITY

- Customize user rights: log search, system setup, two way audio, file management, disk management, remote login, live view, manual record, playback, PTZ control and remote live view
- Supports 1 administrator and 15 users.
- Supports event log recording and checking, events unlimited

NETWORK

- Supports TCP/IP, DHCP, PPPoE, DDNS protocols
- Supports IE browser to do remote viewing
- Supports a maximum of 5 connections simultaneously
- Supports dual stream. Network stream is adjustable independently to fit the network bandwidth and environment.
- Supports picture snap and color adjustment in remote live view
- Supports remote time and event search, and channel playback with picture snap
- Supports remote PTZ control with preset and auto cruise
- Supports remote full menu setup, changing all the DVR parameters remotely
- Supports mobile surveillance by smart phones, Win Mobile Pro, Symbian, and iPhones on 3G networks
- Supports CMS to manage multiple devices on the internet

2. GETTING STARTED

- *Check the unit and the accessories immediately after opening your system.*
- *Please disconnect the power before connecting to other devices.*

2.1 Installing Hard Drive

- *This device supports one SATA hard drive up to 2TB.*
- *Calculate HDD capacity according to the recording settings. Please refer to "Appendix B Calculate Recording Capacity".*

Step 1: Unscrew and Open the top cover

Step 2: Connect the power and data cables. Place the HDD onto the bottom case as shown below.

Fig 2.1 Connect HDD

Step 3: Screw in the HDD as shown below.

Note: For easier installation, please connect the power and data cables first, and then screw the HDD to base.

Fig 2.2 Screw in the HDD

2.2 Front Panel Instructions

An illustration of the Front Panel interface is shown as Fig 2.3:

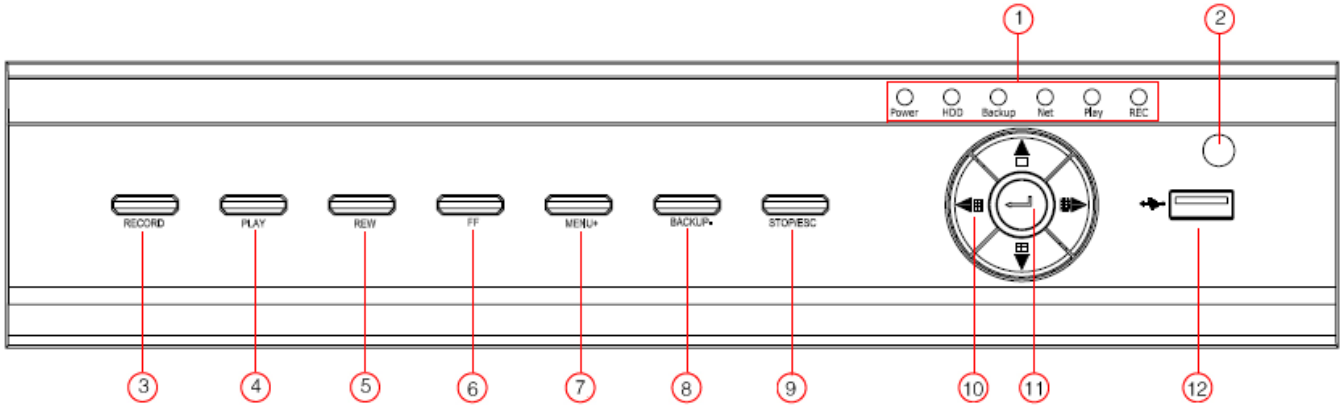


Fig 2.3 Front Panel

Item Number	Name/Symbol	Description
1	**LED INDICATORS**	Working indicators for power, HDD, NET, etc
2	**POWER**	Power On/Off
3	**RECORD**	Record Manually
4	**PLAY**	Enter Play Interface
5	**REW**	Rewind Key
6	**FF**	Fast Forward
7	**+/MENU**	Increase the value in setup/Enter menu in live view
8	**- /BACKUP**	Decrease the value in setup/Enter backup mode in live view
9	**STOP/ESC**	Quit play mode/Exit the current interface or status
10	**DIRECTION/ MULTISCREEN**	1.Change direction to select items 2. Change screen display mode from 1/4/9/16 channel
11	**ENTER**	Confirm selection
12		To connect external USB devices like USB flash, USB HDD for backup or update firmware

2.3 Rear Panel Instructions

Rear Panel Interface

An illustration of the rear Panel interface is shown as Fig 2.4:

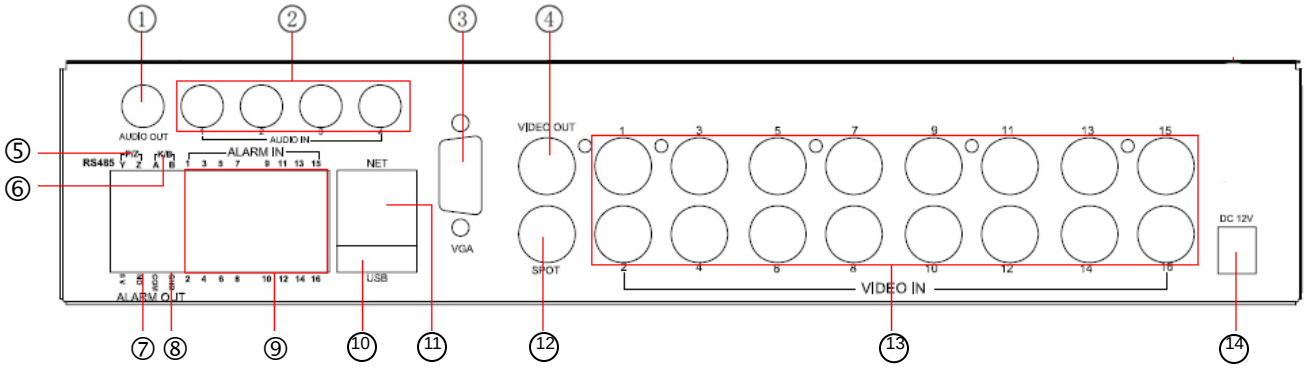


Fig 2.4 Rear Panel

Item Number	Physical Connector	Connector Description
1	**AUDIO OUTPUT**	Connection for audio output. Connect to an amplified speaker.
2	**AUDIO IN**	4-CH Audio input for connecting audio signal
3	**VGA PORT**	VGA output. Connect to monitor.
4	**VIDEO OUT**	Video output for connecting to TV (BNC) or Monitor
5	**RS485**	RS485 for connecting PTZ
6	**K/B**	Connect to keyboard
7	**ALARM OUTPUT**	I/O Output for alarm
8	**+5 AND GND**	+5 and Grounding
9	**ALARM IN**	Connect to external sensor 1-6.
10	**USB PORT**	Connect USB Mouse
11	**NET**	Network port
12	**SPOT**	Connect to monitor as an AUX output channel by channel, only video display, no menu access
13	**VIDEO IN**	Video input channels from 1-16
14	**DC +12V**	Power input

2.4 Remote Control

The remote control uses two AAA size batteries. Instructions for operation are as follows:

Step 1: Open the cover of the Remote Control
Step 2: Place batteries making sure the poles are correct (+ and -)
Step 3: Replace the battery cover

If the remote does not work check the following:

1. Check the pole position of the batteries
2. Check the remaining charge in the batteries
3. Check to make sure the sensor on the DVR is clear
4. If it still doesn't work, contact Q-See for a replacement

Figure 2-5 below illustrates the Remote Control functions as follows:

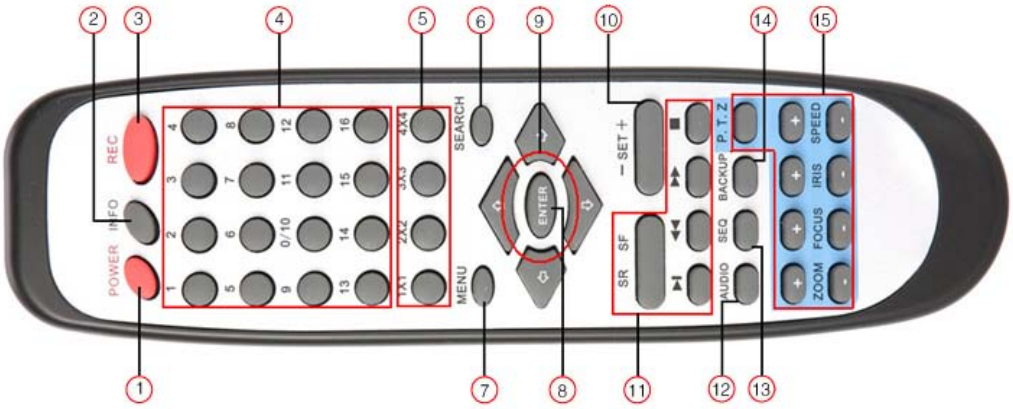


Fig 2.5 Remote Control

ITEM NUMBER	PHYSICAL CONNECTOR	CONNECTOR DESCRIPTION
1	**POWER BUTTON**	Soft switch off to stop firmware running. Use this prior to turning off the DVR.
2	**INFO BUTTON**	Get information about the DVR like firmware version, HDD information
3	**REC BUTTON**	To record manually
4	**NUMBER BUTTONS**	Input numbers or choose camera
5	**MULTI SCREEN BUTTON**	To choose multi screen display mode
6	**SEARCH BUTTON**	To enter search mode
7	**MENU BUTTON**	To enter menu
8	**ENTER BUTTON**	To confirm the choice or setup
9	**DIRECTION BUTTON**	Move cursor in setup or move PTZ camera

Remote Control Functions Continued

ITEM NUMBER	PHYSICAL CONNECTOR	CONNECTOR DESCRIPTION
10	+/- BUTTON	To increase or decrease the value in setup
11	PLAYBACK CONTROL BUTTON	To control playback, Fast forward/rewind/stop/single frame play
12	AUDIO BUTTON	To enable audio output in live mode
13	AUTO DWELL BUTTON	To enter auto dwell mode
14	BACKUP BUTTON	To enter backup mode
15	PTZ CONTROL BUTTON	To control PTZ camera: Move camera/ZOOM/FOCUS/IRIS/SPEED control

2.5 Control with Mouse

2.5.1 Connect Mouse

DVR supports USB mouse through the port on the rear panel, please refer to Fig 2.4 Number 5.

Notice*: If mouse is not detected or doesn't work, check below steps:*
1. Make sure the mouse plugs in the USB mouse port on the back of the DVR, not the front panel port.
2. Try a different mouse

2.5.2 Use Mouse

In Live:

Double-click left button on one camera to be full screen display. Double-click again to return to the previous screen display.

Click right button to show the control bar at the bottom of the screen as Fig 4-1 main menu toolbar

Click right mouse again to hide the control bar.

In Setup:

Click left button to enter. Click right button to cancel setup, or return to the previous screen.

If you want to input values, move cursor to the blank and click. An input window will appear as shown in Fig2.6. It supports numbers, letters and symbols.

Fig 2.6 Numbers and Letters Input Window

Users can change some values by the wheel, such as time. Move cursor onto the value, and roll the wheel when the value blinks.

Also supports mouse drag. I.e. Set motion detection area: click customized, hold left button and drag to set motion detection area. Set schedule: hold left button and drag to set schedule time

In playback:
Click left button to choose the options. Click right button to return to live view.

In backup:
Click left button to choose the options. Click right button to return to previous picture.

In PTZ control:
Click left button to choose the buttons to control the PTZ. Click right button to return to live view.

- Notice: ***Mouse is the default tool for all the operations below unless otherwise noted.***

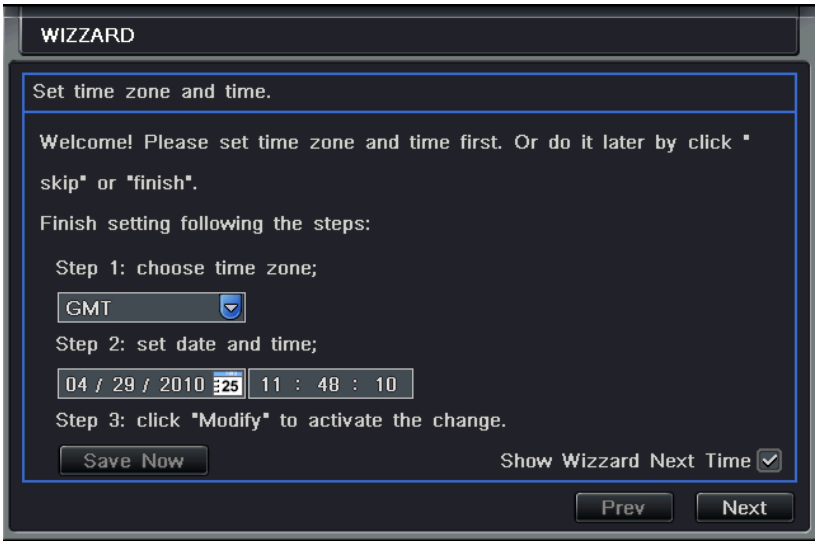
3. BASIC FUNCTION

3.1 Power On/Off

Before you power on the unit, please make sure all the connections are good.

3.1.1 Power On

Step 1: Connect the power supply; switch on the power button near the power port on the rear panel
Step 2: The firmware will be loaded, and the power indicator will display blue
Step 3: At start up, a WIZZARD dialogue box will pop-up (refer to picture below) displaying time zone and time setup information.


WIZZARD
Set time zone and time.
Welcome! Please set time zone and time first. Or do it later by click " skip" or "finish".
Finish setting following the steps:
Step 1: choose time zone;
GMT
Step 2: set date and time;
04 / 29 / 2010
11 : 48 : 10
Step 3: click "Modify" to activate the change.
Save Now
Show Wizzard Next Time
Prev
Next

After the device powers on, if there is no menu or only displays live image, user can hold down ESC button to switch.

Notice: this unit can only display menu on VGA monitor or BNC monitor one at a time. If there is live image display without menu display, please check to see if other monitoring device has menu display first, or hold down ESC key to wait for login dialog box to appear.

3.1.2 Power Off

User can power off the device by using remote control, keyboard or mouse.

By Remote Control:

Step 1: Press Power button, the Shut down window will appear, click OK, the unit will power off after firmware is shut down.
Step 2: Disconnect the power.

By Keyboard and Mouse:

Step 1: Enter into Menu, then select “System Shut Down” icon, the Shut down window will appear
Step 2: Click OK, the unit will power off after firmware is shut down.
Step 3: Disconnect the power.

3.2 Login

User can login and logout of the DVR system. User cannot do any other operations except changing the multi-screen display once logout. Admin has full control over DVR.

Fig 3-1 Login

- **Notice: the default user name and password is "admin" and 123456"**
- **For information on how to change password, add or delete users please refer to Fig 3.7 User management configuration.**

3.3 Live Preview

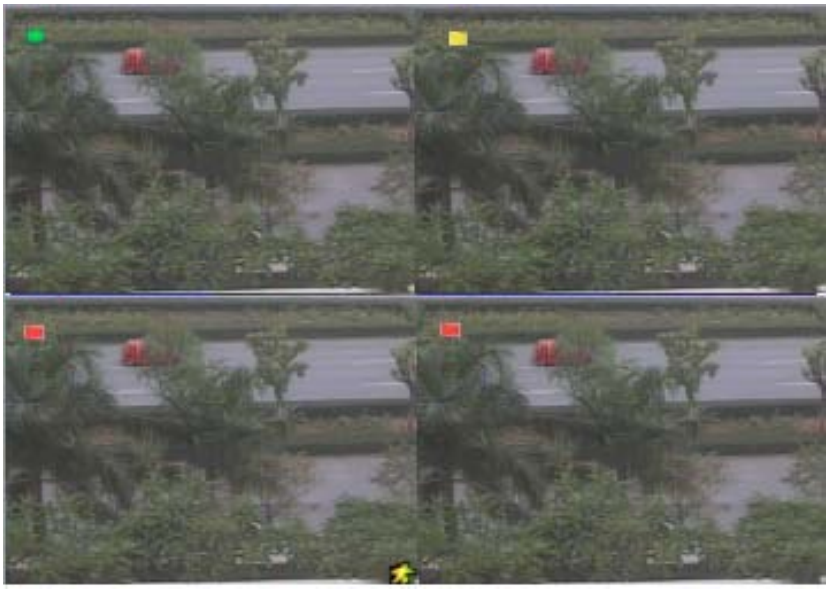


Fig 3-2 Live Preview Interface

The explanation of symbols in the live preview interface:

Symbol	Meaning	Symbol	Meaning
Green	Manual record or time recording	Red	Alarm recording
Yellow	Motion detection recording	Figure icon	Motion event

3.3.1 Live Playback

Click the Play button to playback the record. Refer to Figure3-3. User can operate by clicking the buttons on the screen.

Fig 3-3 Live Playback

4. MAIN MENU SETUP GUIDE

Click right mouse or press ESC button on the front panel, the control bar will display on the bottom of the screen, refer to Fig 4-1:

Fig 4-1 Main Menu Toolbar

Click the icon beside the screen display mode, a channel select dialog will appear as shown below:

User can checkmark channels from 1-ch to 16-ch at random to display the live pictures. Then click button to confirm the setting.

Click the Menu button, the interface will pop-up as shown in Fig 4-2; press MENU button on the front panel or remote control will also display the main interface.

Fig 4-2 Main Menu

4.1 Basic Configuration

Basic configuration includes three sub menus: system, date& time and DST.

4.1.1 Setup

Step1: Enter into Setup configuration→basic configuration→setup; refer to Fig 4-3:

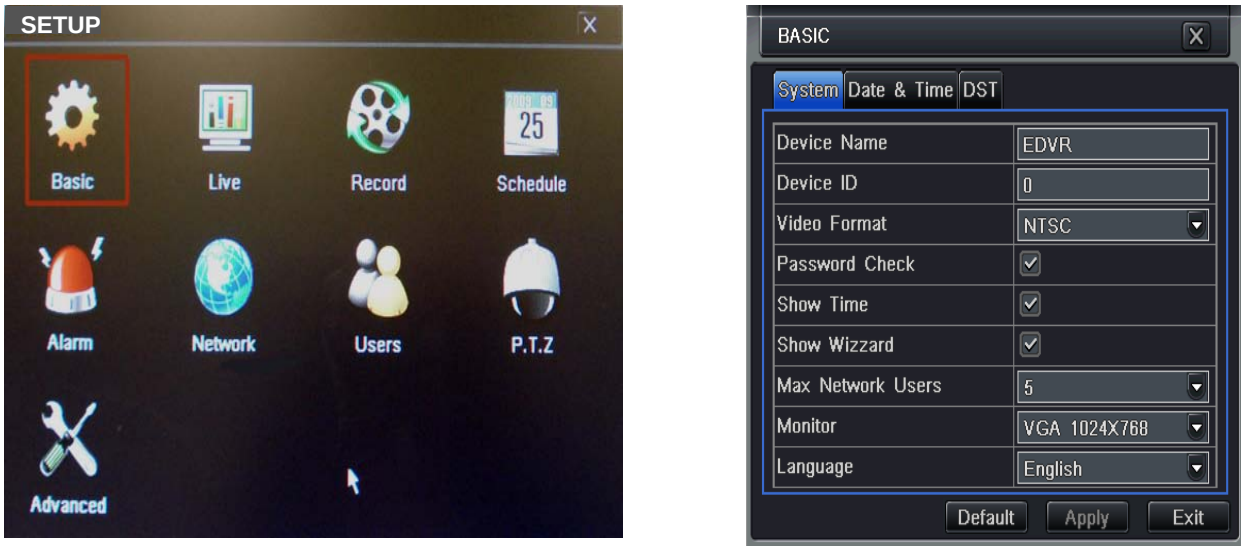


Fig 4-3 Basic Configuration

Step2: In this interface user can setup the device name, device ID, video format, max network users, VGA resolution and language. The explanations for each display are shown below:

Device name: the name of the device. It will display on the client end or CMS and help user to recognize the device remotely.
Video format: two modes: PAL and NTSC. User can select the video format according to that of camera, in USA and Canada we use NTSC cameras.
Password Check: if you enable this option, user needs to input user name and password to do corresponding operations in system configuration.
Show time: display time in live view.
Show wizard: check this item, an opening wizard will display with time zone and time setup information
Max network users: set the maximum number of network connections
VGA resolution: the resolution of live display interface, options are: VGA800*600, VGA1024*768, VGA1280*1024 and CVBS
Note: Switching between VGA and CVBS will change the menu output mode, please connect to relevant monitor, VGA for VGA monitor, CVBS for TV or monitor that is connected using BNC adapter.
Language: setup the menu language.
Note: after changing the language and video output, the device needs to restart.

4.1.2 Time & Date

Step 1: Enter into system configuration→basic configuration→time & date; refer to Fig 4-4:

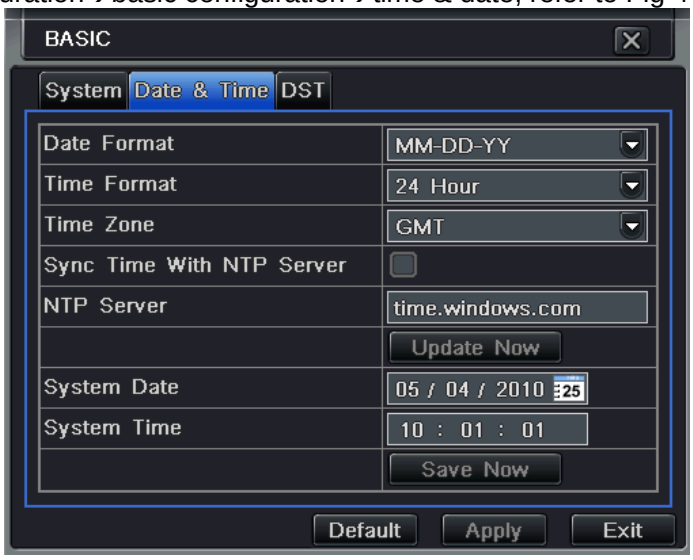


Fig 4-4 Basic Configuration-Time & Date

Step 2: Set the date format, time format, time zone in this interface; Checkmark "sync time with NTP server" to refresh NTP server date; user also can adjust system date manually

Step 3: Click "default" button to restore default settings; click "apply" button to save the settings; click "exit" button to exit current interface.

4.1.3 DST

Step1: Enter into system configuration→basic configuration→DST; refer to Fig 4-5:

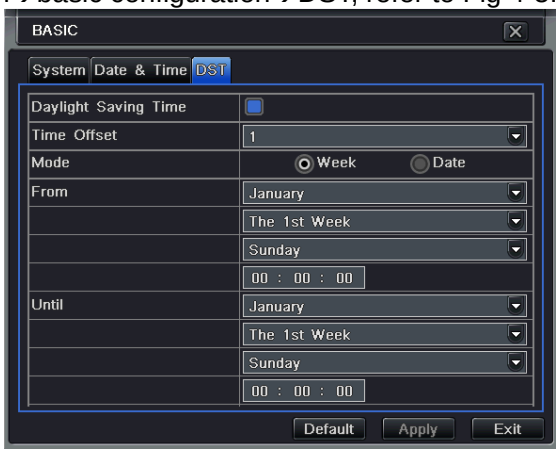


Fig 4-5 Basic Configuration-DST

Step 2: In this interface, you can enable daylight saving time, time offset, mode, start & end month/week/date, etc.

Step 3: Click "default" button to restore default settings; click "apply" button to save the settings; click "exit" button to exit current interface.

4.2 Live Configuration

Live configuration includes four submenus: live, host monitor, SPOT and mask.

4.2.1 Live

In this interface, user can setup camera names, adjust colors: brightness, hue, saturation and contrast.

Step 1: Enter into system configuration→live configuration→live; refer to Fig 4-6:

Fig 4-6 Live Configuration→Live

Step 2: Checkmark camera name; click “setting” button, a window will pop-up shown as Fig 4-7:

Fig 4-7 Live-Color Adjustment

Step 3: In this interface, user can adjust brightness, hue, saturation and contrast in live view; click “default” button to restore default settings, click “OK” button to save the settings.

Step 4: User can setup all channels with same parameters, checkmark “all”, then do relevant setup.

Step 5: Click “default” button to restore default settings; click “apply” button to save the settings; click “exit” button to exit current interface.

4.2.2 Host Monitor

Step 1: Enter into system configuration→live configuration→host monitor; refer to Fig 4-8:

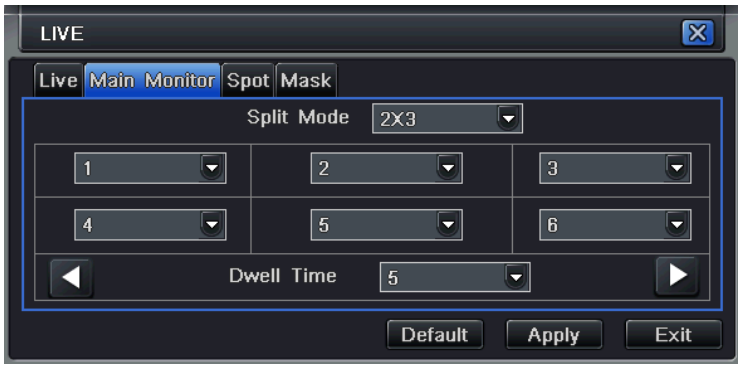


Fig 4-8 Live Configuration-Host Monitor

Step 2: Select split mode: 1×1, 2×2, 2×3, 3×3, 4×4 and channel

Step 3: Dwell time: the time interval for a certain picture display before switching to next picture display

Step 4: Select the split mode, then setup current picture group. Click button to setup the previous channel groups of pictures, click button to set latter channel groups of pictures.

Step 5: Click “default” button to restore default settings; click “apply” button to save the settings; click “exit” button to exit current interface.

NOTE: If you have dual monitors Host monitor needs to be main monitor.

4.2.3 SPOT

Step 1: Enter into system configuration→live configuration→SPOT; refer to Fig 4-9:

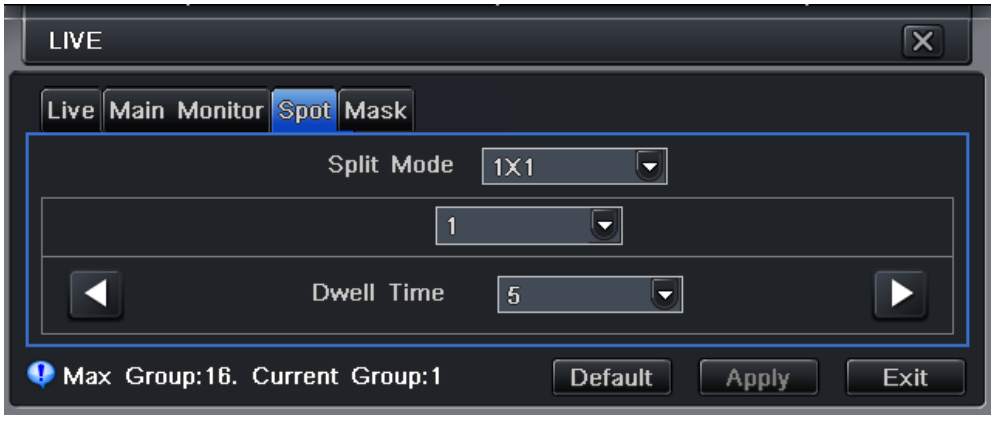


Fig 4-9 Live Configuration-SPOT

Step 2: Select split mode: 1×1 and channel

Step 3: Dwell time: the time interval for a certain picture display before switching to the next picture display.

Step 4: Select the split mode, then setup current picture group. Click button to setup the previous channel groups of pictures, click button to set the latter channel groups of pictures.

Step 5: Click “default” button to restore default setting; click “apply” button to save the setting; click “exit” button to exit current interface.

To activate this setting, go to the main camera screen and click on the Dwell icon (Fig 4-1). This will make the camera rotate based on the setting in Main Monitor.

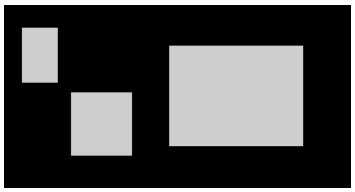
4.2.4 Mask

User can setup private mask area on the live image picture, maximum of three areas.

Fig 4-10 Live Configuration-Mask

Setup Mask Area: click Setting button, enter into live image and press left mouse button and drag mouse to set mask area, refer to picture below. Click Apply button to save the setting.

Delete Mask Area: select a certain mask area, click left mouse button to delete that mask area, click Apply button to save the setting.



Setup Mask Area

Live Image Mask Area

4.3 Record Configuration

Record configuration includes five sub menus: enable, record bit rate, time, recycle record and stamp.

4.3.1 Enable

Step 1: Enter into system configuration→record configuration→enable; refer to Fig 4-11:

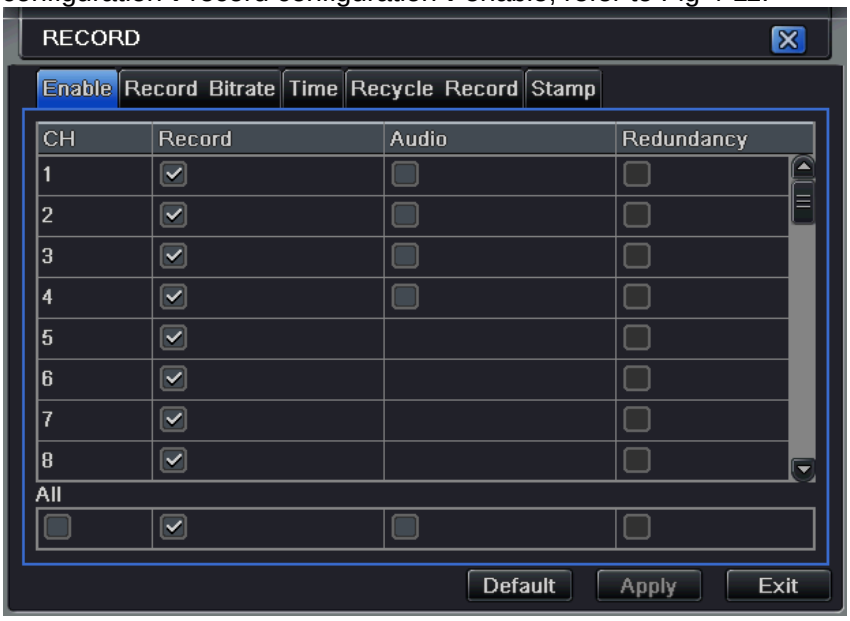


Fig 4-11 Record Configuration-Enable

Step 2: Checkmark record, audio and record time

Step 3: User can setup all channels with same parameters, checkmark “all”, then do relevant setup.

Step 4: Click “default” button to restore default setting; click “apply” button to save the setting; click “exit” button to exit current interface.

4.3.2 Record stream

Step 1: Enter into system configuration→record configuration→record bit rate; refer to Fig 4-12:

Fig 4-12 Record Configuration-Record Bit Rate

Step 2: Setup rate, resolution, quality, encode and max bit stream

Step 3: User can setup all channels with same parameters, checkmark “All”, then to do relevant setup.

Step 4: Click “default” button to restore default setting; click “apply” button to save the setting; click “exit” button to exit current interface.

Note: if you set a value that is higher then maximum supported by the device, the value will be adjusted automatically.

Definitions and descriptions of Record stream:

Parameter	Definition
Rate	Range from: 1-30 (NTSC) 1-25(PAL)
Resolution	Supports CIF and D1
Quality	The quality of recorded images. The higher the value, the clearer the recorded image is. Six options: lowest, lower, low, medium, higher and highest.
Encode	VBR and CBR
Max bit stream	Range from: 64 Kbps、128 Kbps、256 Kbps、512 Kbps、768 Kbps、1Mbps、2 Mbps

4.3.3 Time

Step 1: Enter into system configuration→record configuration→ time; refer to Fig 4-13:

Fig 4-13 Record Configuration-Time

Pre-alarm record time: set the record time before event happen i.e. record time before motion detection or sensor alarm is triggered.

Post-alarm record: set the post recording time after the alarm is finished, five options: 10s, 15s, 20s, 30s and 60seconds.

Expire time: the hold time of saved records. When the set date has passed, the record files will be deleted automatically.

Step 2: User can setup all channels with same parameters, checkmark “all”, then to do relevant setup.

Step 3: Click “default” button to restore default setting; click “apply” button to save the setting; click “exit” button to exit current interface.

4.3.4 Recycle Record

Step 1: Enter into system configuration→record configuration→recycle record;

Step 2: Checkmark recycle record, the recycle record function will be enabled, it will overwrite the earlier recorded files and keep recoding when HDD is full; if not enables the DVR will stop recording when HDD is full.

Step 3: Click “default” button to restore default setting; click “apply” button to save the setting; click “exit” button to exit current interface.

4.3.5 Stamp

Stamp： User can display the channel name and time stamp on video.

Step 1: Enter into system configuration→ record configuration→ stamp; refer to Fig 4-14:

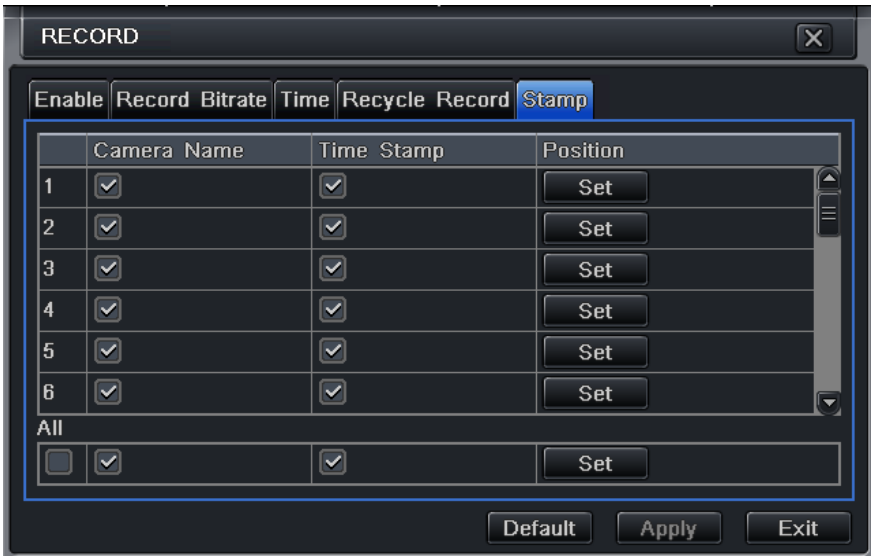
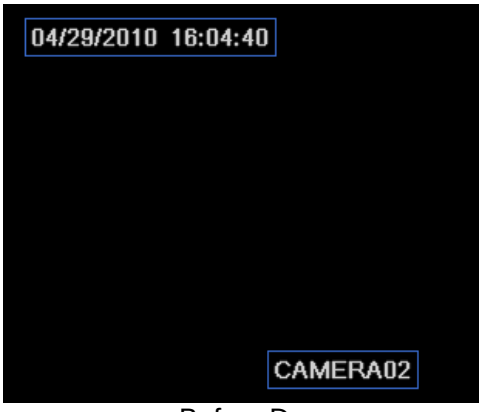
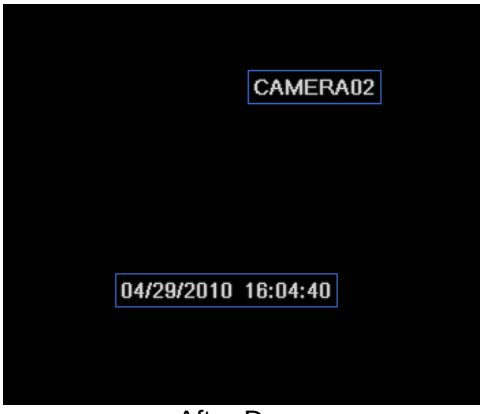


Fig 4-14 Record Configuration-Stamp

Step 2: Checkmark camera name, time stamp; click Set button, user can use cursor to drag the camera name and time stamp to random positions, refer to below Figures:



Before Drag



After Drag

Step 3: User can setup all channels with same parameters, checkmark “all”, then to do relevant setup.

Step 4: Click “default” button to restore default setting; click “apply” button to save the setting; click “exit” button to exit current interface.

4.4 Schedule Configuration

Schedule configuration includes three sub menus: schedule, motion and alarm.

4.4.1 Schedule

Step 1: Enter into system configuration→schedule configuration→schedule; refer to Fig 4-15:

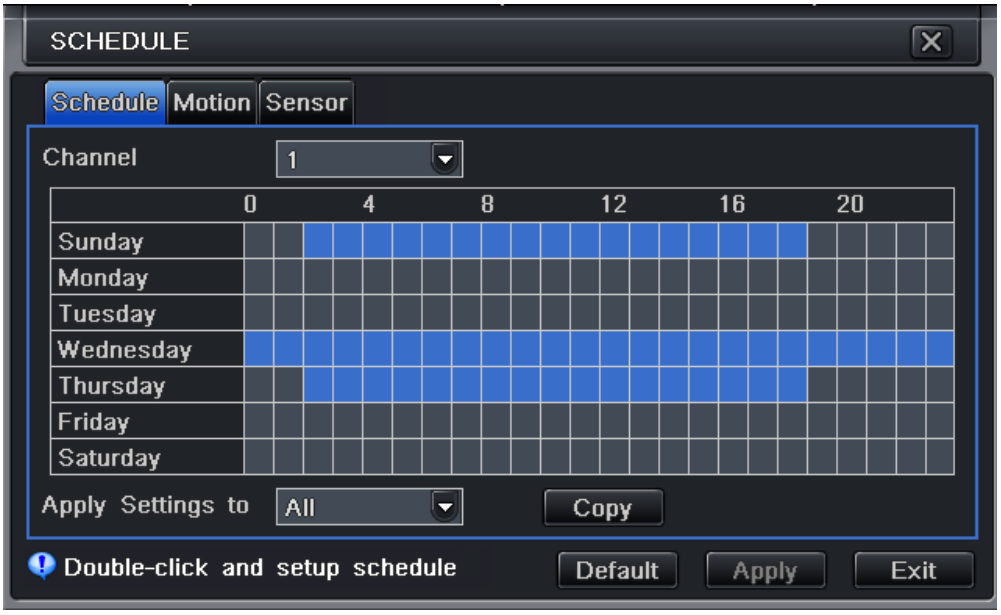


Fig 4-15 Schedule Configuration-Schedule

Step 2: Select channel, double-click and a dialog box will pop-up shown as Fig 4-16, user can edit week schedule:

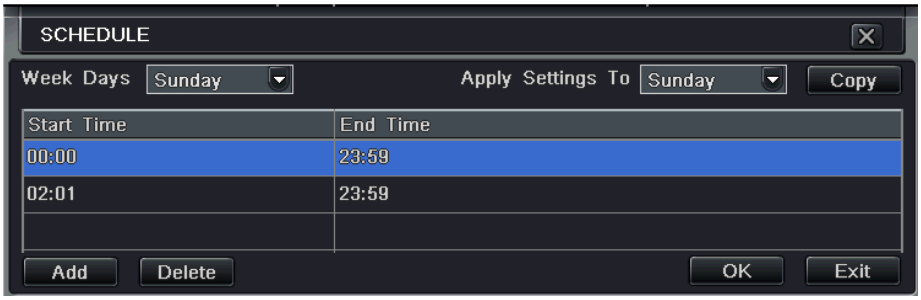


Fig 4-16 Schedule-Week Schedule

① Click “add” button to add a certain day schedule; click “delete” button to delete the selected schedule;
Copy: user can copy the specify schedule to other dates.
Click “OK” button to save the setting, click “Exit” button to exit current interface.

② User can apply the schedule setting of certain channel to other or all channels, just only select channel and click “Copy” button.

Step 3: Click “default” button to restore default setting; click “apply” button to save the setting; click “exit” button to exit current interface.

4.4.2 Motion

Step 1: Enter into system configuration→schedule configuration→motion; refer to Fig 4-17:

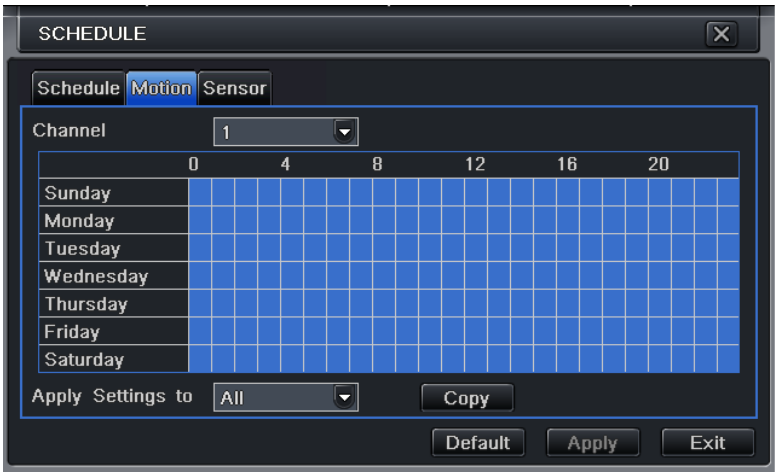


Fig 4-17 Schedule Configuration-Motion

Step 2: The setup steps of motion are similar to schedule; user can refer to 4.4.1 Schedule for details.

Note: the default schedule of motion detection is all of the time, that is, the color of schedule interface is all blue.

4.4.3 Sensor

Step 1: Enter into system configuration→schedule configuration→alarm; refer to Fig 4-18:

Step 2: The setup steps of alarm are similar to schedule; user can refer to 4.4.1 Schedule for details.

Note: the default schedule of motion detection is all of the time, that is, the color of schedule interface is all blue.

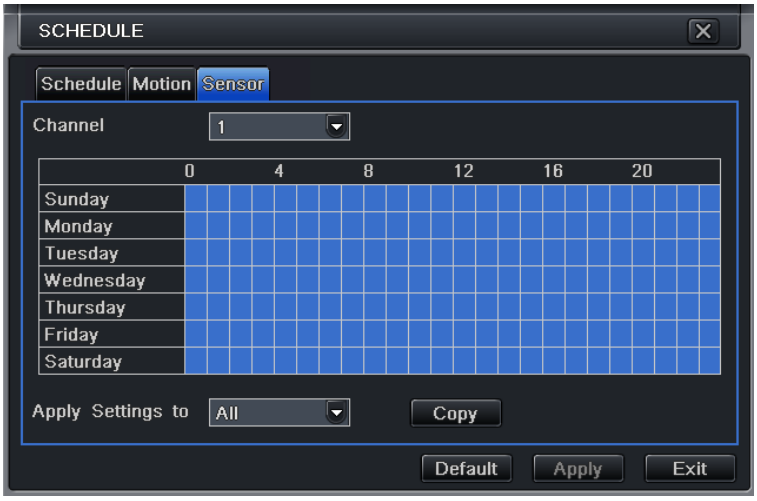


Fig 4-18 Schedule Configuration-Sensor

4.5 Alarm Configuration

Alarm configuration includes five sub menus: sensor, motion, video loss, other alarm and alarm out.

4.5.1 Sensor (to setup optional external motion sensors)

Sensor includes three sub menus: basic, alarm handling and schedule.

① Basic

Step 1: Enter into system configuration→alarm configuration→sensor→basic; refer to Fig 4-19:

Fig 4-19 Alarm Configuration-Sensor Basic

Step 2: Enable sensor alarm, set the alarm type according to triggered alarm type. Two options: NO (normally open) and NC (normally closed).
Step 3: User can setup all channels with same parameters, checkmark “all”, then to do relevant setup.
Step 4: Click “default” button to restore default setting; click “apply” button to save the setting; click “exit” button to exit current interface.

② Alarm Handling

Step 1: Enter into system configuration→alarm configuration→sensor→alarm handling; refer to Fig 4-20:

Fig 4-20 Alarm Configuration-Sensor-Alarm Handling

Step 2: Select hold time, click Trigger button, and a dialog box will pop-up shown as Fig 4-21:

Fig 4-21 Alarm Handling-Trigger

Step 3: Checkmark Buzzer, there will be triggered buzzer alarm out;

Full screen alarm: when triggered alarm, there will pop up an alarm full screen;

To alarm out: checkmark the channel, there will be triggered alarm out on the designated channel. Click OK button to save the setting; click Exit button to exit the current interface.

To record: checkmark recoding channels, it will record from the camera when alarm is triggered. Click OK button to save the setting; click Exit button to exit the current interface.

To P.T.Z: set linked preset and cruise for alarm. User can select any channel or multiple channels as linked channels. Click OK button to save the setting; click Exit button to exit the current interface.

Step 4: User can setup all channels with same parameters, checkmark “all”, then to do relevant setup.

Step 5: Click “default” button to restore default setting; click “apply” button to save the setting; click “exit” button to exit current interface.

③ Schedule

Step 1: Enter into system configuration→alarm configuration→sensor→schedule; refer to Fig 4-22:

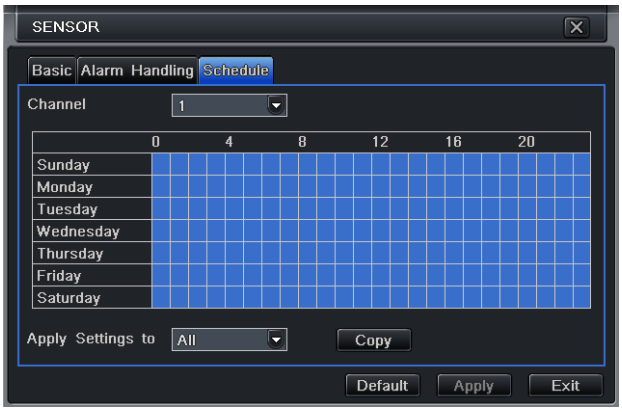


Fig 4-22 Sensor-Schedule

Step 2: The setup steps of sensor schedule are similar to schedule; user can refer to 4.4.1 Schedule for details.

Note: the default schedule of motion detection is all of the time, that is, the color of schedule interface is all blue.

4.5.2 Motion

Motion includes two sub menus: motion and schedule.

① Motion

Step 1: Enter into system configuration→alarm configuration→motion; refer to Fig 4-23:

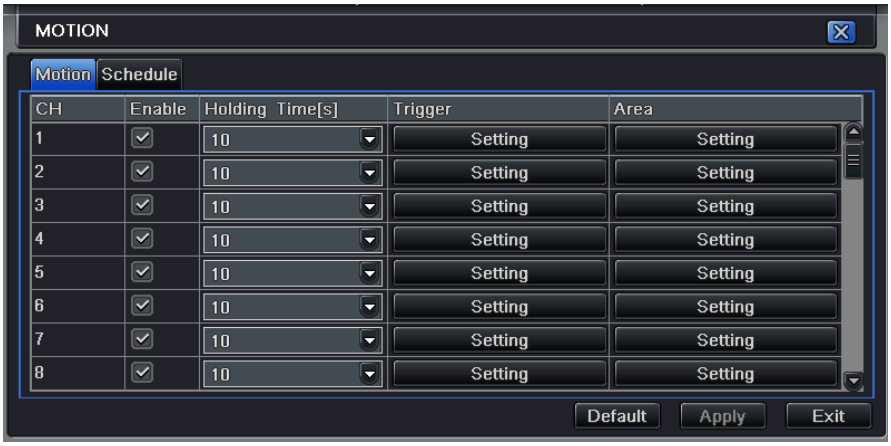


Fig 4-23 Alarm Configuration-Motion

Step 2: Enable motion alarm, set alarm hold time which means time interval between two consecutive motion events. If there is other motion detected during the interval period which is considered continuous movement; it will be included in the current file, otherwise, it will be considered the start of a new motion file. Click Trigger button, a dialog box will pop-up:

Step 3: The setup steps of motion trigger are similar to alarm handling; user can refer to Chapter 4.5.1 Sensor →alarm handling for more details.

Step 4: Click Area button, a dialog box will pop-up shown as Fig 4-24:

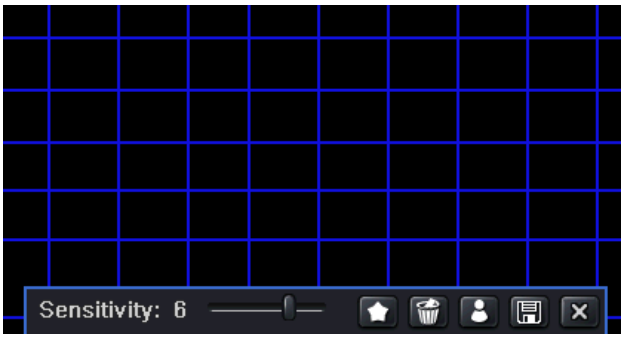
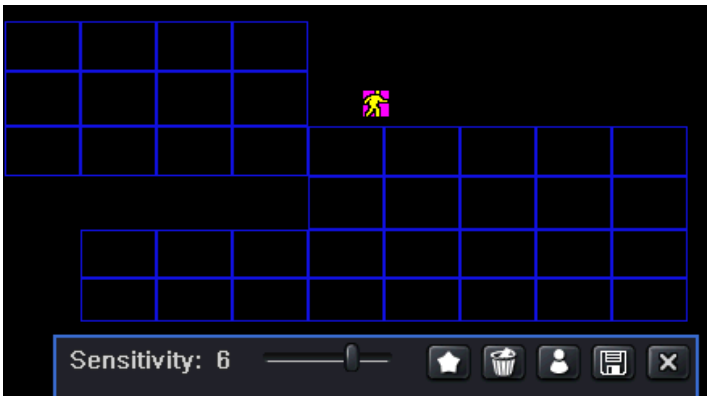


Fig 4-24 Motion-Area

Step 5: In the Area interface, user can drag slide bar to set the sensitivity value (1-8), the default value is 4. The higher the value the higher sensitivity you get. Since the sensitivity is influenced by color and time (day or night), user can adjust its value according to the practical conditions; click icon, set the whole area as detection area; click icon, the set detection area will be cleared; click icon, user can test whether the sensitivity value and motion area are suitable to current conditions (refer to following picture) ; Click icon, to save the setting; click icon, exit current interface.



Note: when user drags mouse to set motion detection area, they have to click icon to clear current detection area first, and then set the area.

Step 6: User can setup all channels with same parameters, checkmark “all”, then to do relevant setup.

Step 7: Click “default” button to restore default setting; click “apply” button to save the setting; click “exit” button to exit current interface.

② Schedule

Step 1: Enter into system configuration→alarm configuration→schedule; refer to Fig 4-25:

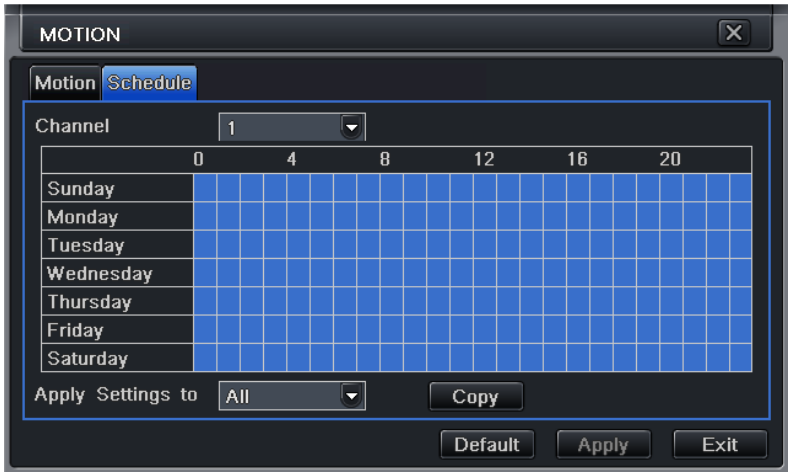


Fig 4-25 Alarm Configuration-Schedule

Step 2: The setup steps of alarm schedule are similar to schedule; user can refer to 4.4.1 Schedule for details.

4.5.3 Video Loss

Step 1: Enter into system configuration→alarm configuration→video loss; refer to Fig 4-26:

Fig 4-26 Alarm Configuration-Video Loss

Step 2: The setup steps of video loss trigger are familiar with alarm handling; user can refer to Chapter 4.5.1 Sensor →alarm handling for more details.

Step 3: User can setup all channels with same parameters, checkmark “all”, then to do relevant setup.

Step 4: Click “default” button to restore default setting; click “apply” button to save the setting; click “exit” button to exit current interface.

4.5.4 Other Alarm

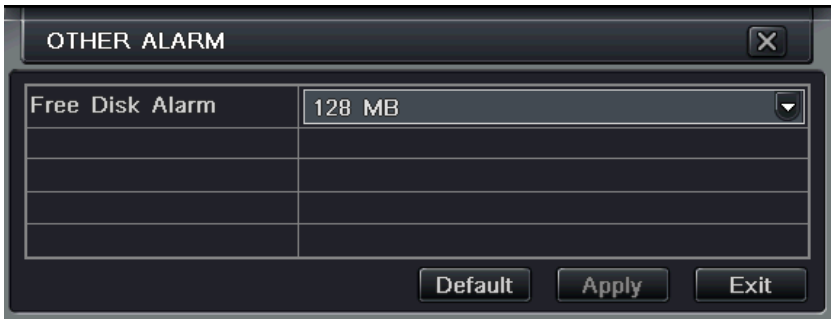


Fig 4-27 Other Alarm

Step 1: Enter into system configuration→other alarm; refer to Fig 4-27:

Step 2: Select a hard disk in the pull down list box, when the disk capacity is lower than that value, there will appear some text information on the lower right of the live image.

Step 3: Click “default” button to restore default setting; click “apply” button to save the setting; click “exit” button to exit current interface.

4.5.5 Alarm Out

Alarm out includes three sub menus: alarm out, schedule and buzzer

① Alarm out

Step 1: Enter into system configuration→alarm out; refer to Fig 4-28:

Fig 4-28 System Configuration-Alarm Out

Step 2: In this interface, set relay alarm out name, select hold time which means the interval time between the two consecutive alarms.

Step 3: User can setup all channels with same parameters, checkmark “all”, then to do relevant setup.

Step 4: Click “default” button to restore default setting; click “apply” button to save the setting; click “exit” button to exit current interface.

② Schedule

Step 1: Enter into system configuration→schedule;

Step 2: The setup steps of alarm out schedule are similar to schedule; user can refer to 4.4.1 Schedule for details.

Note: the default schedule of motion detection is all of the time, that is, the color of schedule interface is all blue.

③ Buzzer

Step 1: Enter into system configuration→buzzer;

Step 2: Checkmark Buzzer, set buzzer alarm hold time

4.6 Network Configuration

Network configuration includes two submenus: network and network stream.

4.6.1 Network

Step 1: Enter into system configuration→network configuration→network; refer to Fig 4-29:

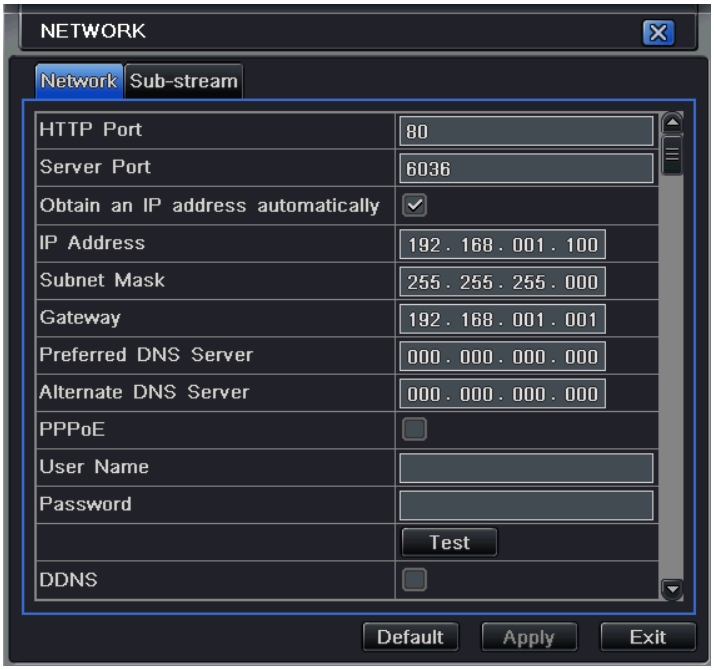


Fig 4-29 Network Configuration-Network

Step 2: HTTP port: the default value is 80. If this value is changed, user needs to add the port number when typing IP address in IE address blank .i.e. set HTTP port to 82, IP address: http://192.168.0.25, user needs to input this address: http://192.168.0.25:82 into IE browser. Server port: communication port

Step 3: Checkmark the "Obtain IP address automatically", the device will receive IP address, subnet mask, gateway IP from the router the DVR is attached to.

Step 4: Enable PPPOE, user can directly connect the DVR to internet via ADSL, then input the user name and password; click TEST button to test the effectiveness of supplied information. You will need to get the account information from your internet service provider.

Step 5: Enable DDNS server: user needs to input user name, password and host domain name of the registered website, click TEST to test the effectiveness of information you input.

Step 6: Click “default” button to restore default setting; click “apply” button to save the setting; click “exit” button to exit current interface.

Definitions and descriptions of network configuration:

Parameter	Meaning
HTTP port	The port number of accessing IE browser. The default port is 80
Server port	The port number for data. The default port is 6036
Static IP	
IP address	The IP address of the DVR
Subnet mask	The subnet mask of the server
Gateway	The gateway of the router
DNS server	The address of DNS server
PPPoE	
User name	User name of broad band account
Password	Password of broad band account
DDNS server	
DDNS server	Website provided by dynamic domain name supplier. The optional: myq-see.com, www.dyndns.com
User name	User name to log in to the website of domain name supplier
Password	Password to log in to the website of domain name supplier

4.6.2 Network Stream

Step 1: Enter into system configuration→network configuration→sub stream; refer to Fig 4-33:

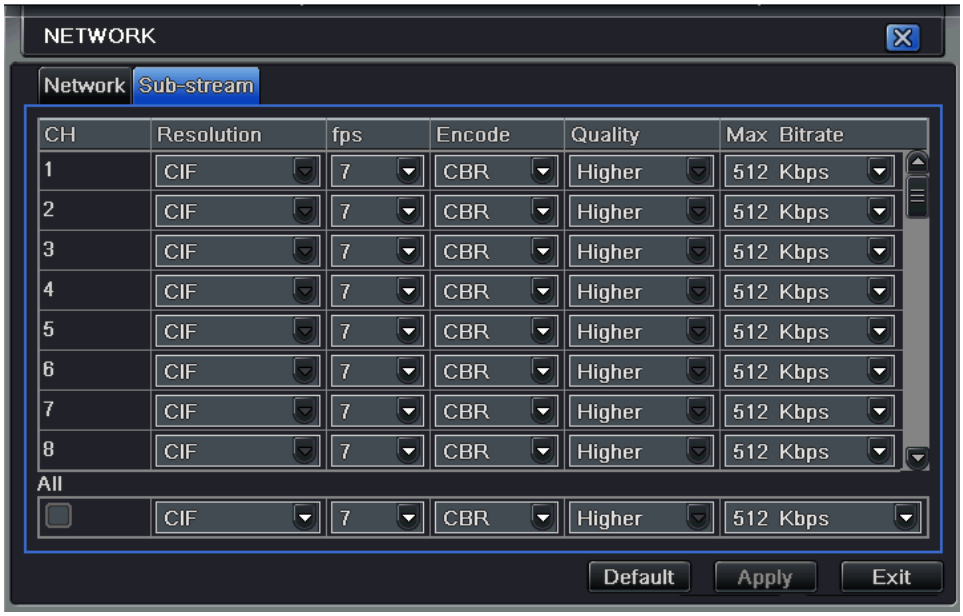


Fig 4-33 Network Configuration-Sub Stream

Step 2: Select fps, resolution, quality, encode and max bit rate

Step 3: User can setup all channels with same parameters, checkmark “all”, then to do relevant setup.
Step 4: Click “default” button to restore default setting; click “apply” button to save the setting; click “exit” button to exit current interface.

Definitions and descriptions of network stream:

Parameter	Meaning
FPS	Range from: 1-30
Resolution	Supports CIF and D1
Quality	The quality of the video image. The higher the value is, the clearer the recorded image, and the more hard drive space the recordings take up. Six options: lowest, lower, low, medium, higher and highest.
Encode	VBR and CBR
Max bit rate	Range from: 64 Kbps, 128 Kbps, 256 Kbps, 512 Kbps, 768 Kbps, 1Mbps, 2 Mbps

4.7 User Management Configuration

Step 1: Enter into system configuration→user management configuration; refer to Fig 4-34:

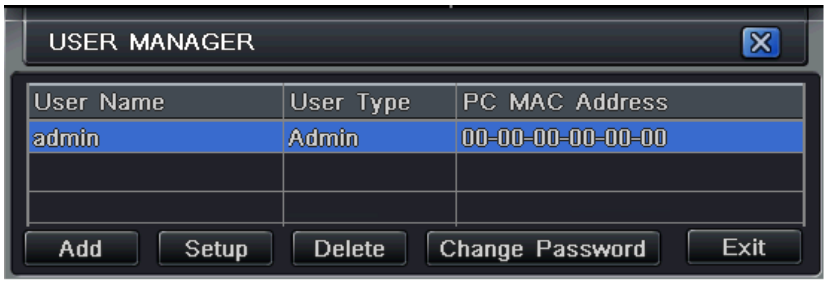


Fig 4-34 User Management Configuration

Step2: Click Add button, a dialog box will pop-up shown as Fig 4-35:

Fig 4-35 Add-General

General: Input user name, password; select user type: normal or advance.

If you only want the user to be able to access the DVR from a specific computer then put a checkmark in the Binding PC MAC Address option and enter the MAC address of the only PC you want the user to be able to access from.

① Authority:

Step 1: Enter into Add user→authority; refer to Fig 4-36:

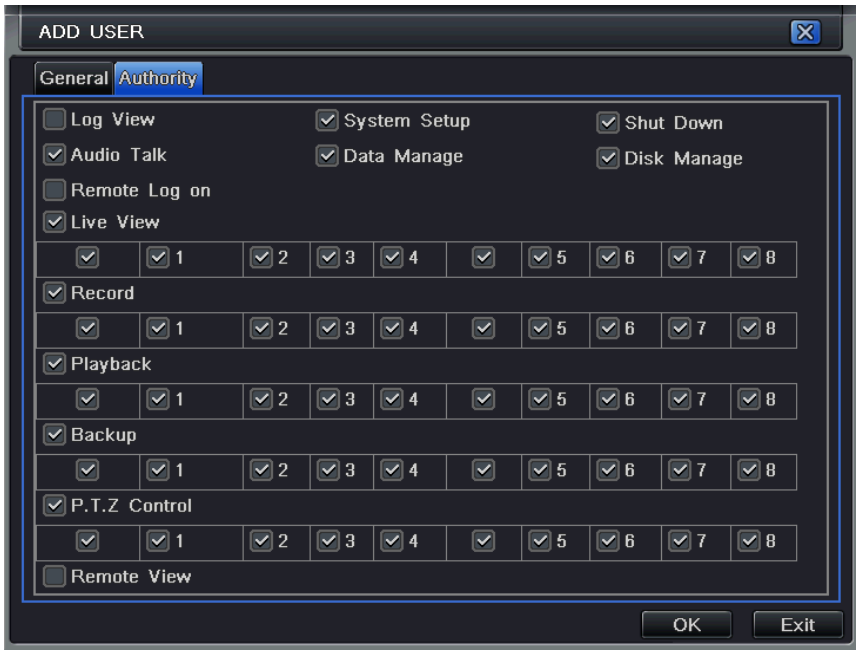


Fig 4-36 Add User-Authority

Step 2: In the authority interface, assign the definite operation right for that user.

Step 3: In the user management interface, click Setup button to modify user name, user type and binding PC MAC address if used.

Step 4: Select the user that you want to delete in the user list box, then click Delete button to delete this user.

Step 5: Click Change password button to modify the password; click Exit button to exit the current interface.

4.8 P.T.Z configuration

P.T.Z configuration includes two submenus: serial port and advance

① Serial Port

Step 1: Enter into system configuration→P.T.Z configuration→serial port; refer to Fig 4-37:

Fig 4-37 P.T.Z Configuration-Serial Port

Step 2: Checkmark Enable, setup the value of address, baud rate and protocol according to the settings of the PTZ speed dome.

Step 3: User can setup all channels with same parameters, checkmark “all”, then to do relevant setup.

Step 4: Click “default” button to restore default setting; click “apply” button to save the setting; click “exit” button to exit current interface.

Definitions and descriptions of PTZ:

Parameter	Meaning
Address	The address of the PTZ device
Baud Rate	Baud rate of the PTZ device. Range form: 110, 300, 600, 1200, 2400, 4800, 9600, 19200, 34800, 57600, 115200, 230400, 460800, 21600.
Protocol	Communication protocol of the PTZ device. Supported Protocols are: NULL, PELCOP, PELCOD, LILIN, MINKING, NEON, STAR, VIDO, DSCP, VISCA, SAMSUNG, RM110, HY

② Advance

Step 1: Enter into system configuration→ P.T.Z configuration→advance; refer to Fig 4-38:

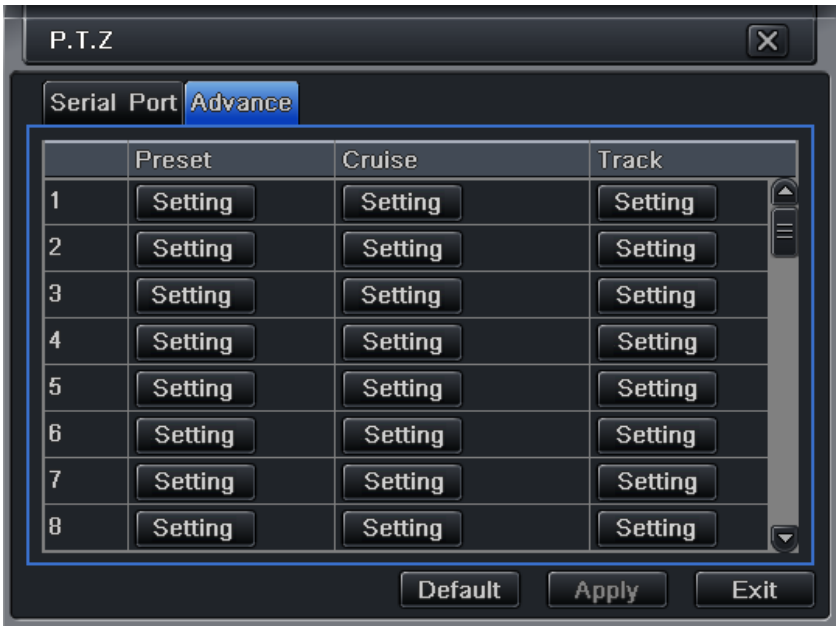


Fig 4-38 P.T.Z Configuration-Advance

Step 2: In the Advance interface, click preset "Setting" button, a dialog box will pop-up shown as Fig 4-39:

Fig 4-39 Advance-Preset Setting

a. In the preset set interface, click Setting button, a dialog will pop-up shown as Fig 4-40:

Fig 4-40 Preset Set-Setting

b. User can control the dome rotating up, up left, down, right down, left , left down, right and up right and stop rotating; adjust the rotate speed and the value of zoom, focus and iris of the dome;
c. Select the serial number of the preset point, set the preset name. Click Save button to save the settings, click icon to hide the tool bar, right-key can display it; click icon to exit the current interface.
d. In the preset interface, click OK button to save the setting; click Exit button to exit current interface.

Step 3: In the Advance interface, click cruise "Setting" button, a dialog box will pop-up shown as Fig 4-41:

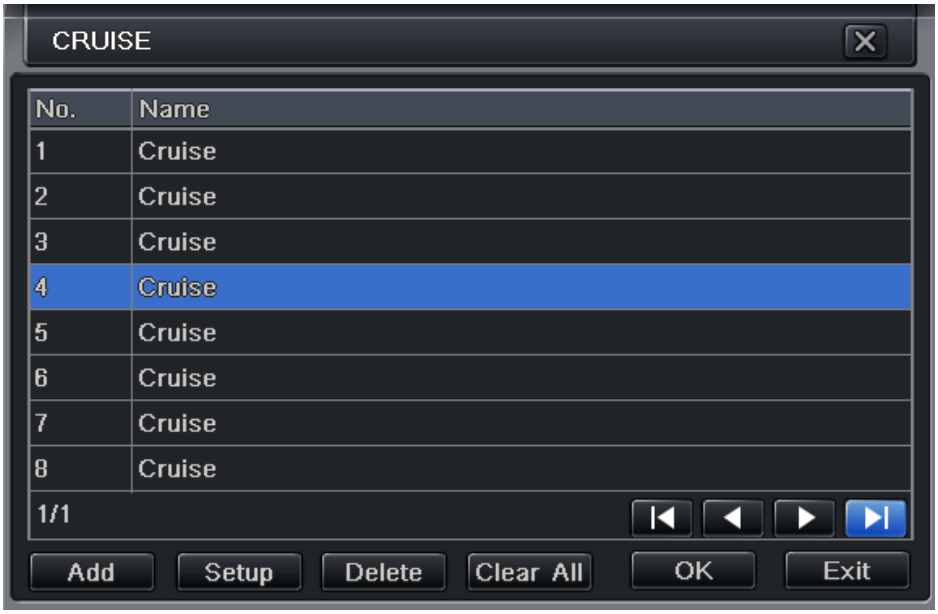


Fig 4-41 Cruise Set

a. Click Add button to add cruise line in the list box (max 8 cruise lines can be added); select a cruise line, click Setup button, a dialog box will pop-up shown as Fig 4-42:

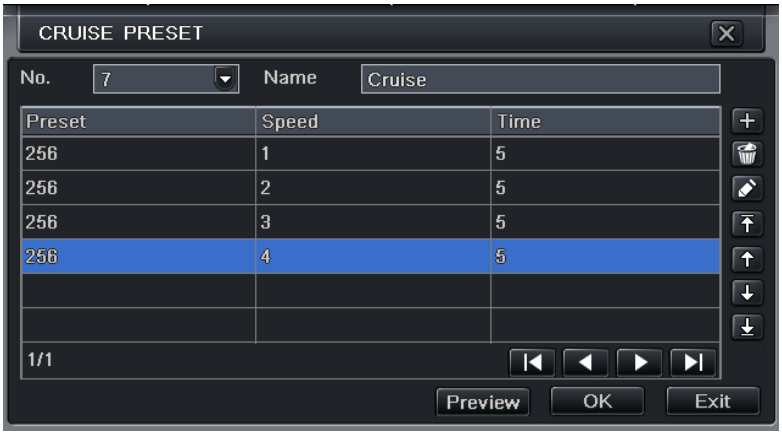


Fig 4-42 Cruise Set-Modify Cruise Line

b. Click Add icon to set the speed and time of preset point; select a preset point, click Delete icon to delete that preset point; click Modify icon to modify the setting of a preset point. User can click icons to adjust the position of preset point. Click Preview button to preview the cruise line, click OK button to save the setting, click Exit button to exit current interface.

c. Select a preset point in the cruise line list box, click Delete button to delete that cruise line; click Clear all button to clear all cruise lines from the list box; click OK button to save the setting; click Exit button to exit current interface.

Step4: In the Advance interface, click track "Set" button, a dialog box will pop-up as Fig 4-43:

Fig 4-43 Track Set

a. User can control the dome rotating up, up left, down, right down, left, left down, right and up right and stop rotating; adjust the rotate speed and the value of zoom, focus and iris of the dome; click Start Record button to record the moving track of PTZ, click this button again to stop recording; click Start track button to play recorded track, click this button again to stop play.

b. Click icon to hide the tool bar, right-key can display it; click icon to exit the current interface.

Step 5: In the Advance interface, click "default" button to restore default setting; click "apply" button to save the setting; click "exit" button to exit current interface.

5. RECORD, SEARCH, PLAYBACK AND BACKUP

Search configuration includes three submenus: time search, event search and file manager.

5.1 Time Search

Step 1: Enter into Search configuration→time search; refer to Fig 5-1:

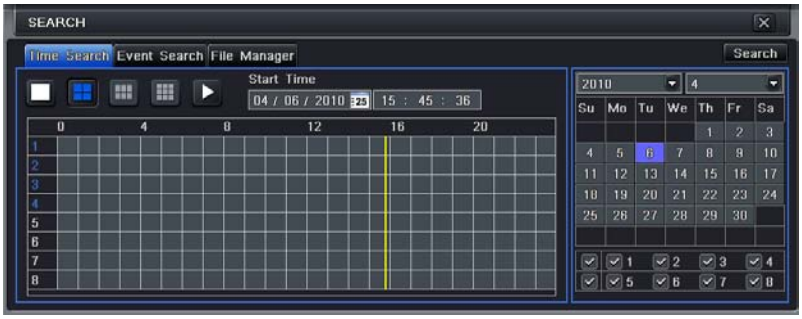


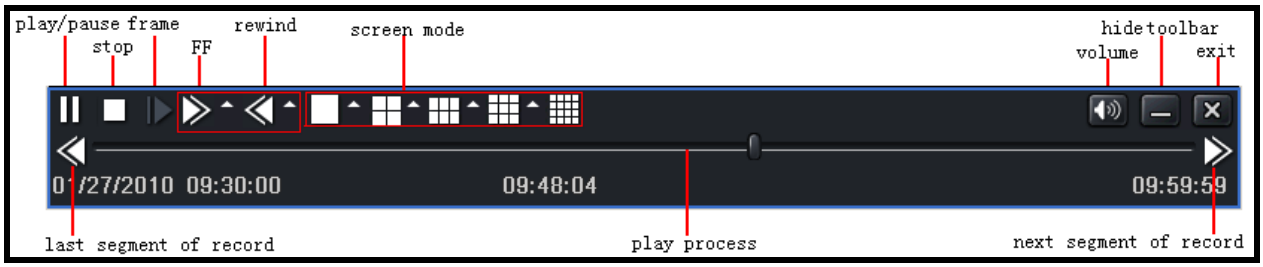
Fig 5-1 Search Configuration Time Search

Step 2: Select channel, screen display mode, the highlighted dates on the calendar means the days have recorded data.

Step 3: Select a date, press Search button, click the time grid to set the play start time or input play time manually. The selected time will match the blue grid.

Note: the vertical column represents the Channel number. The horizontal column represents hours of the day.

Step 4: Click Play button to playback record; click the relevant buttons on the screen to do various operations:



Playback Buttons

Note: when the monitor resolution is VGA 800*600, the time search interface will show a hide button, click this button, the whole interface will be expanded.

5.2 Event Search

Step 1: Enter into Search configuration→event search; refer to Fig 5-2:

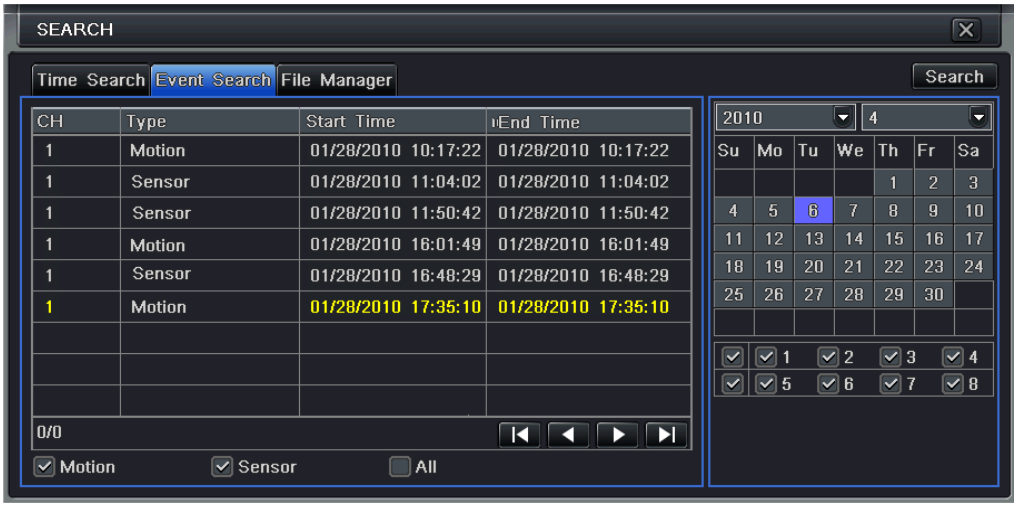


Fig 5-2 Search Configuration-Event Search

Step 2: Click Search button, the searched event information will be displayed in the event list box. Select date, channel, checkmark Motion, Sensor or All accordingly.

Step 3: Double click the record file you would like to playback.

Note: when the monitor resolution is VGA 800*600, the event search interface will display a hide button, click this button, the whole interface will be expanded.

5.3 File Manager

Step 1: Enter into Search configuration→file manager; refer to Fig 5-3:

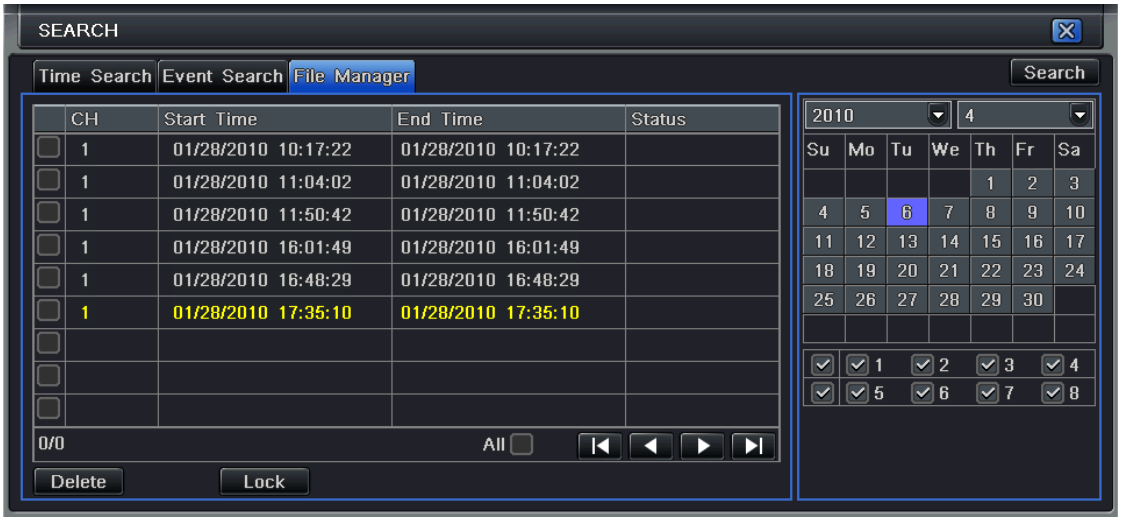


Fig 5-3 Search Configuration-File Manager

Step 2: Click Search button, the searched files will be displayed in the file list box, user can select date, channels accordingly.

① Lock: check a file, click Lock button to lock this file, after that, that file will not be deleted or covered (unless you format the hard drive).
② Unlock: check a locked file, click Lock button to unlock this file
③ Delete: check an unlocked file, click Delete button to delete this file.

Step 3: Checkmark "All" button; user can lock/unlock or delete all files in the file manager column.

Step 4: Double click an unlocked item to playback.

Note: when the monitor resolution is VGA 800*600, the file manager interface will display a hide button. Click this button to expand the interface.

5.4 Backup

This unit supports backup to USB Flash, USB hard drive and USB DVD burner through the USB port on the front panel. You can also backup via IE browser over the Internet. Refer to 7.6.2 Remote Backup.

Step 1: Enter into backup configuration; refer to Fig 5-4:

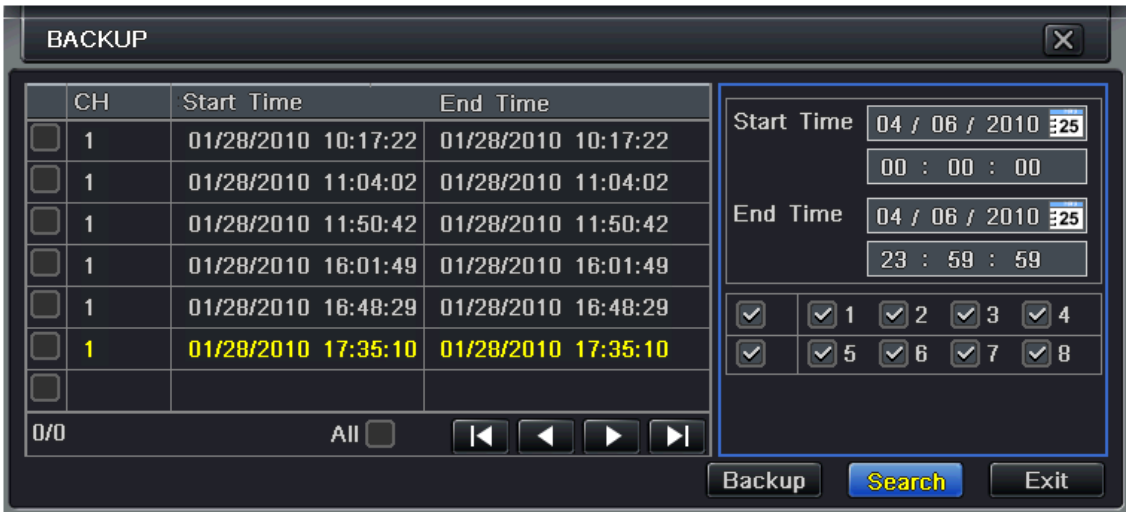


Fig 5-4 Backup Configuration

Step 2: Set the start & end time, select channels, click Search button, the searched data will be displayed in the data backup list box

Step 3: Check a data file or checkmark “All” to select all data files , click Backup button, a dialog box will pop-up shown as Fig 5-5:

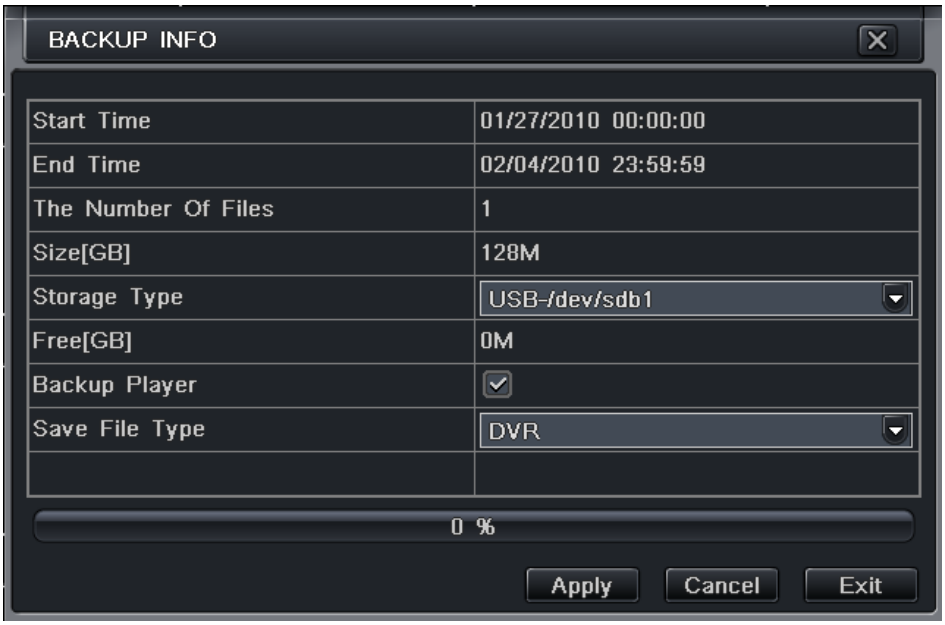


Fig 5-5 Backup Information

Step 4: In the backup information interface, you can check the relevant information of backup files, storage type, save file type, etc. Once click Apply button to start backup.

To play back the files plug the USB device to a PC and browse the device, you will see 2 folders, one VideoPlay, and another containing video files. Open the VideoPlay folder and run Videoplay.exe, click on open path, and point to folder with video files.

Note: when the monitor resolution is VGA 800*600, the file manager interface will display a hide button, click this button, the whole interface will be expanded.

6. DVR MANAGEMENT

6.1 Checking System Information

Check system information includes five submenus: system, event, log, network and online users.

6.1.1 System Information

In this interface, user can check the hardware version, MCU version, kernel version, device ID, etc. refer to Fig 6-1:

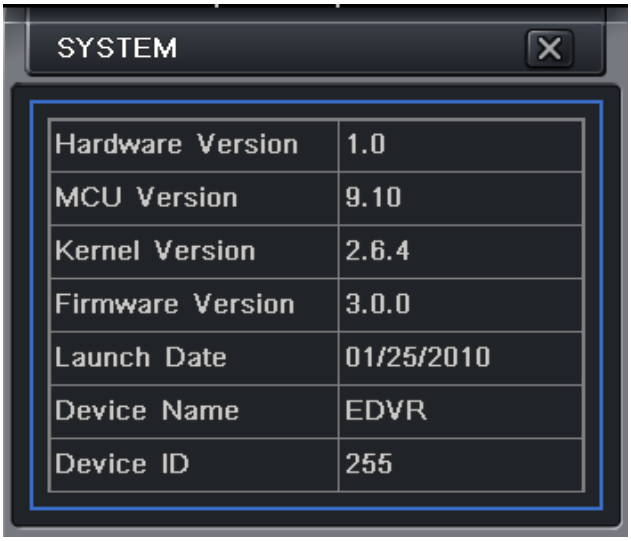


Fig 6-1 System Information

6.1.2 Event Information

In this interface, user can check recorded events according to selected date; refer to Fig 6-2:

Fig 6-2 Event Information

6.1.3 Log Information

In this interface, user can check relevant log information according to selected date; refer to Fig 6-3:

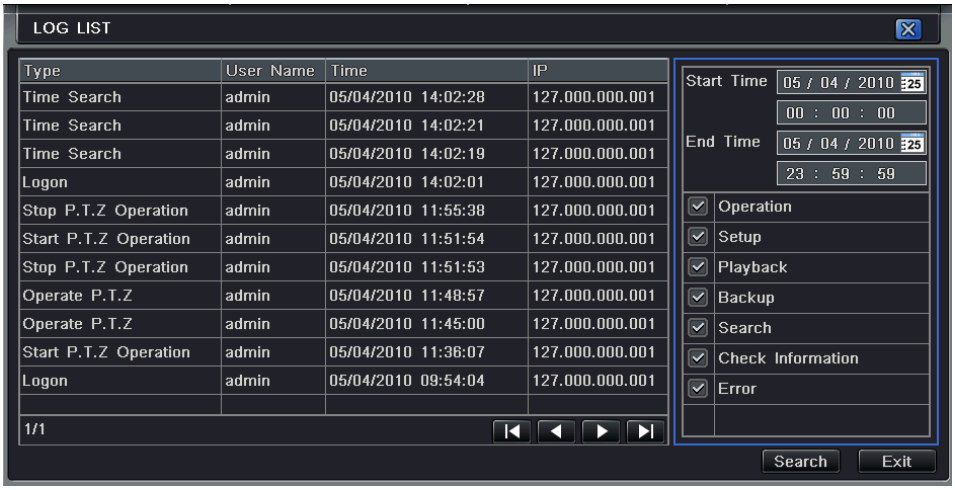


Fig 6-3 Log Information

6.1.4 Network information

In this interface, user can check relevant parameters of network; refer to Fig 6-4:

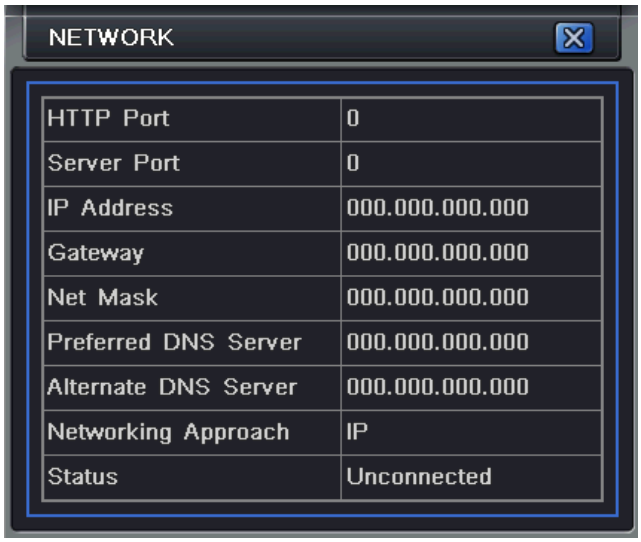


Fig 6-4 Network Information

6.1.5 Online Information

In this interface, user can check the details of the current connection of online users; refer to Fig 6-5:

Fig 6-5 Online Information

6.1.6 Manual Alarm

In this interface, user can check the relevant parameters of manual alarm; refer to Fig 6-6:

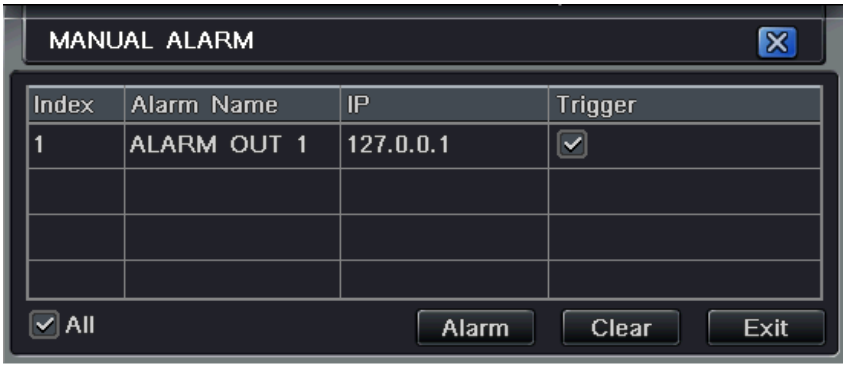


Fig 6-6 Manual Alarm

6.1.7 Disk Manager

Step 1: Enter into disk manager interface; refer to Fig 6-7:

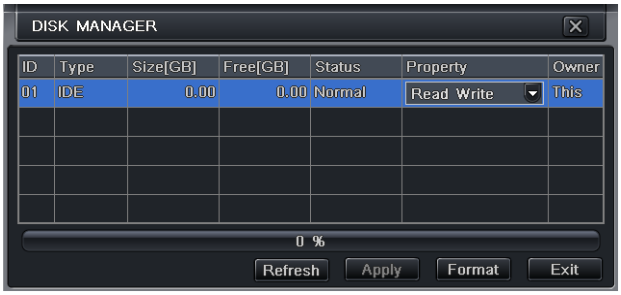


Fig 6-7 Disk Manager

Note: you need to format the hard disk before recording. The screen will show the size of the drive, amount of free space, and percentage of used space at the bottom of the screen.

Step 2: Click Refresh button to refresh the disk information of the list box; set the property of the disk then click Apply button to save the setting

Step 3: Select the hard disk, click Format button to start format.

Note: all recorded files in the hard disk will be lost after formatted.

6.1.8 Upgrade

At present, it only supports USB update. Get the firmware from Q-See when there is a new firmware version, and make sure it is the correct one for the DVR. User can check the USB information in Disk manager.

6.1.9 Logoff

Click Log off icon, a log off dialogue box will popup, click OK button, the device will log off. If user wants to log in again, click icon to enter user name and password to login again.

7. REMOTE SURVEILLANCE

7.1 Network Access

Accessing the DVR from a computer attached to the same router: If you are only going to access the DVR from a computer that is attached to the same router as the DVR you only need to setup the information in the NETWORK settings using either the DHCP option or assigning a static IP following the instructions below. Since you are just going from one location to another on the same network port forwarding and knowing the public IP address are not necessary. You would just access the DVR by entering the IP address of the DVR from the NETWORK setup into the Internet Explorer browser window. After you setup the NETWORK settings using DHCP or Static IP instructions skip down to the section: To access the DVR through Internet Explorer.

7.2 Setting Up Remote Access

There are 4 ways you can setup the DVR to be accessed remotely; DHCP, Static IP, PPPOE, and DDNS.

DHCP: If your router is setup for DHCP, and most of them are by default, you can have the router assign an IP address to the DVR. To do this go to the Main Menu and select the System icon (Red box in Fig 7-1), then select the Network icon (Red box in Fig 7-2), this will display the NETWORK screen shown in Fig 7-3. Put a checkmark in the box at the end of the “Obtain an IP address automatically” line (Red box in Fig 7-3) and then click the TEST button (Green box in Fig 7-3). After you get the OK message in the lower left hand corner of the screen you click the Apply button to save the IP address. To find out what IP address was assigned you need to go to the Information icon (Green box in Fig 7-1). After the router has assigned the DVR an IP address it is a good idea to write down the address from the information section and then type the address into the IP address line and then remove the checkmark from the box above the line. This is the IP address you will forward ports 80 and 6036 to on the router so you can access the DVR from remote computers.

Fig 7-1 Main Menu

Fig 7-2 System

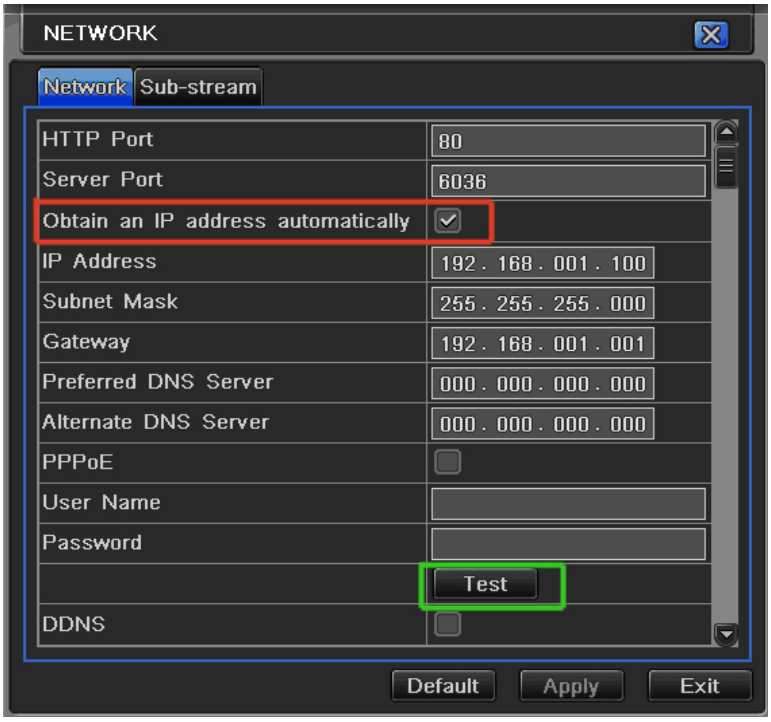


Fig 7-3 DHCP

Static IP: You will need to setup the network settings on the DVR to match the settings of the router that you attach the DVR to. To get the router settings you would go to the run option on a computer attached to the same router as the DVR and type cmd and hit OK to bring up a command prompt (Fig 7-4), then type ipconfig at the prompt (RED arrow on Fig 7-4) to access the router settings. Write down the gateway and subnet mask numbers (GREEN arrows on (Fig 7-4) so you can copy them into the network settings on the DVR (GREEN boxes on Fig 7-5). Go to the Main Menu and select the Setup option (Red box in Fig 7-1), then select the Network icon (Red box in Fig 7-2), to get to the NETWORK screen shown in Fig 7-5.

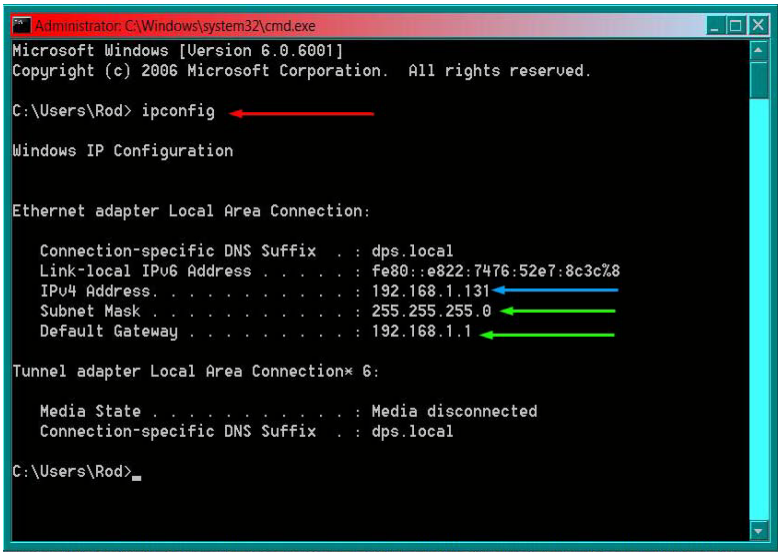

Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.0.6001]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.
C:\Users\Rod> ipconfig
Windows IP Configuration
Ethernet adapter Local Area Connection:
Connection-specific DNS Suffix . : dps.local
Link-local IPv6 Address . . . . . : fe80::e822:7476:52e7:8c3c%8
IPv4 Address. . . . . : 192.168.1.131
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.1.1
Tunnel adapter Local Area Connection* 6:
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . : dps.local
C:\Users\Rod>

Fig 7-4 ipconfig

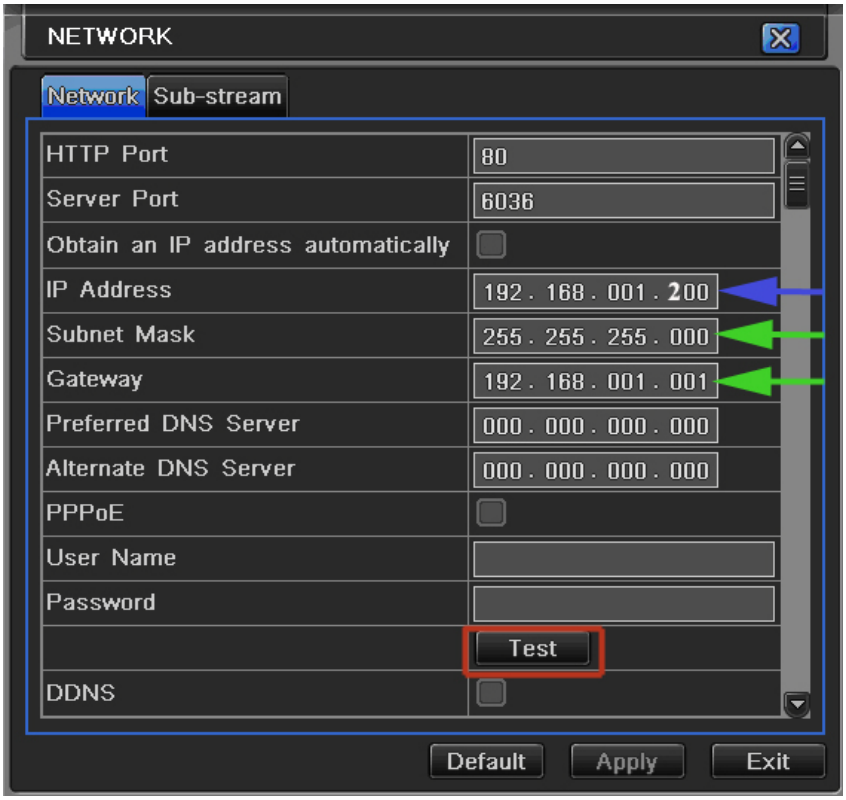


Fig 7-5 Static IP

For the DVRs IP address you would enter the same first 3 sets of numbers as the gateway and select a fourth set of numbers that is different then any other device attached to the same router. If the IP address of your computer in the ipconfig (BLUE arrow in Fig 7-4) was a single or two digit number you should be ok with any three digit number, if the computer IP address ends with a number in the 100s then you should go with a 200 number (Blue arrow in Fig 7-5). After you enter the numbers click the test button (Red box in Fig 7-5), when you get the OK message in the lower left corner of the screen click on the Apply button to save the setting.

PPPOE: If you are going to attach the DVR directly to a DSL or Cable modem instead of a router you will need to select the PPPOE option in the NETWORK options. To do this go to the Main Menu and select the System icon (Red box in Fig 7-1), then select the Network icon (Red box in Fig 7-2), this will display the NETWORK screen shown in Fig 7-6. Put a checkmark in the PPPOE option box (Red box in Fig 7-6) and enter your internet account User Name and Password in the boxes. You will need to contact your internet service provider to get the User name and Password you need to enter into these boxes. After you enter the information into the boxes click on the Test button (Green box in Fig 7-6), after you get the OK message in the lower left of the screen click on the Apply button to save the information.

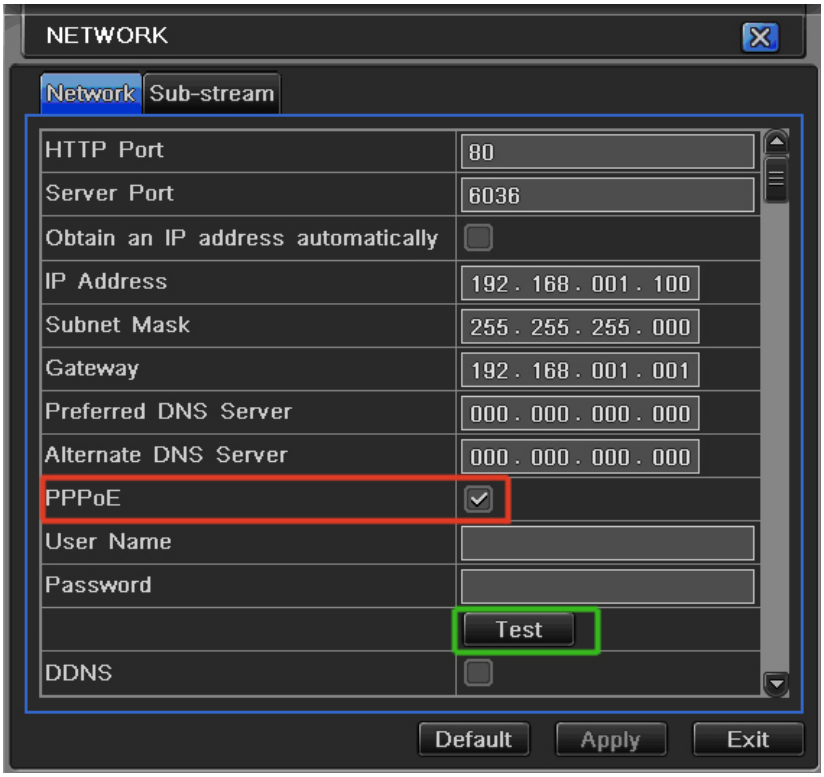


Fig 7-6 PPPoE

DDNS: You can access the DVR through a static or dynamic IP address; however a dynamic address can change from time to time. How often depends on your service provider. When it changes you need to go to a website such as www.myipaddress.com from a computer attached to the same router as the DVR to find out what the new IP address is. There are two solutions to this problem. One would be to get a static IP address from your service provider so that you do not have to be concerned with the address changing. Another solution would to use a dynamic domain name service to get a domain name that can be linked to your dynamic IP address. We suggest myq-see.com or www.dyndns.com since the DVR is setup to accept account information from these two domain name services.

NOTE: Before you setup DDNS you must first set up Port Forwarding as directed in Section 7.3 PORT FORWARDING

To setup the DVR for access through a dynamic domain name you go to the Main Menu and select the System icon (Red box in Fig 7-1), then select the Network icon (Red box in Fig 7-2), this will display the NETWORK screen shown in Fig 7-7. Put a checkmark in the DDNS option (Red box in Fig 7-7). Select the service you are using from the drop down menu under the checkmark box and enter the account information you registered with the domain name service. Click the Test button under the boxes where you entered the account information and after you get the OK message in the lower left hand corner of the screen click on the Apply button . You will then be able to access the DVR remotely by entering the domain name into a browser window on a remote computer. This DVR supports DDNS provided by myq-see.com and www.dyndns.com. Instructions for setting up DDNS through mwq-see.com is provided below.

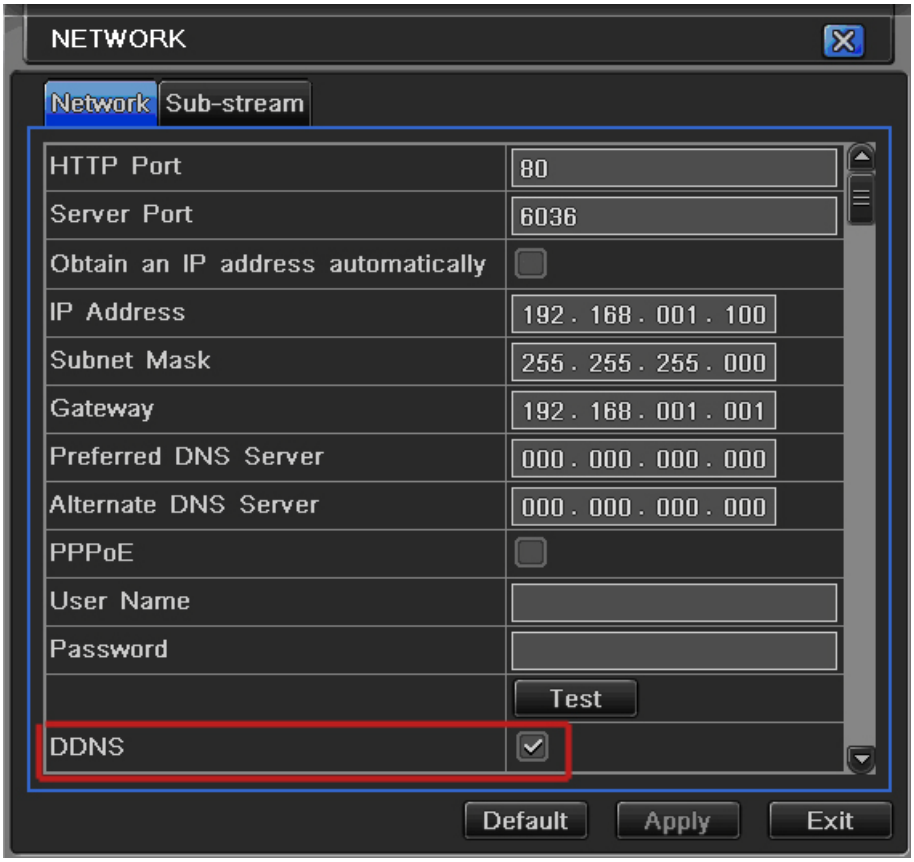


Fig 7-7 DDNS

Setting up MYQ-SEE DDNS:

NOTE: Before you setup DDNS you must first set up Port Forwarding as directed in Section 7.3 PORT FORWARDING. Once you have enabled Port Forwarding, you can configure your DDNS information by following these steps:

a. Using a computer that is connected to the same network as your Q-See DVR, use your IE Browser to go to http://myq-see.com.

b. Click on the New User? Link at the bottom of the page (http://myq-see.com/reg.asp).

c. Complete the registration process by following the on-screen directions and click the [Submit] button at the bottom of your screen (Fig 7-8).

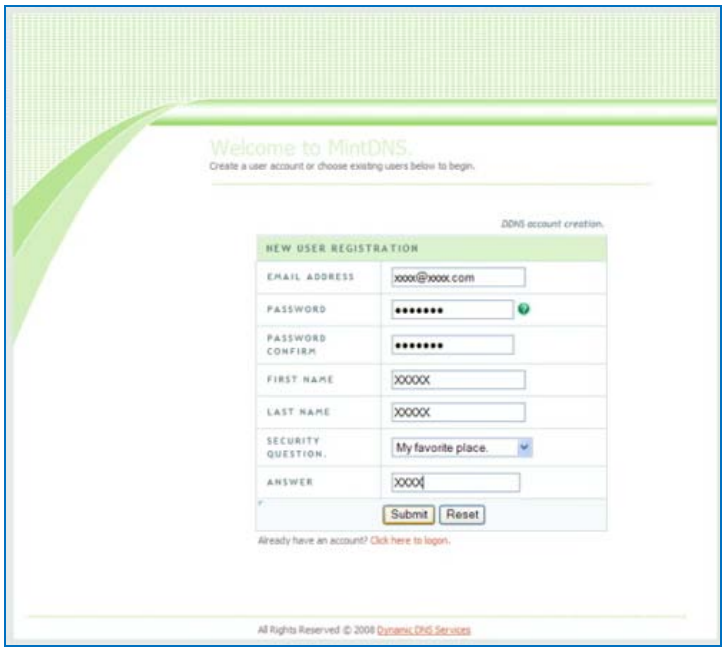


Fig 7-8 Registration

d. The next screen will ask you to create a domain name. Domain names must start with an (a-z) or (0-9) and cannot contain a hyphen. Once you choose your domain name, click on the [Request Domain] button. This will generate a confirmation screen which tells you if your Domain name is available and list an IP address (Fig 7-9). Verify that this is your current IP Address by going to www.myipaddress.com and checking that it is the same address listed in your confirmation screen (Fig 7-9).

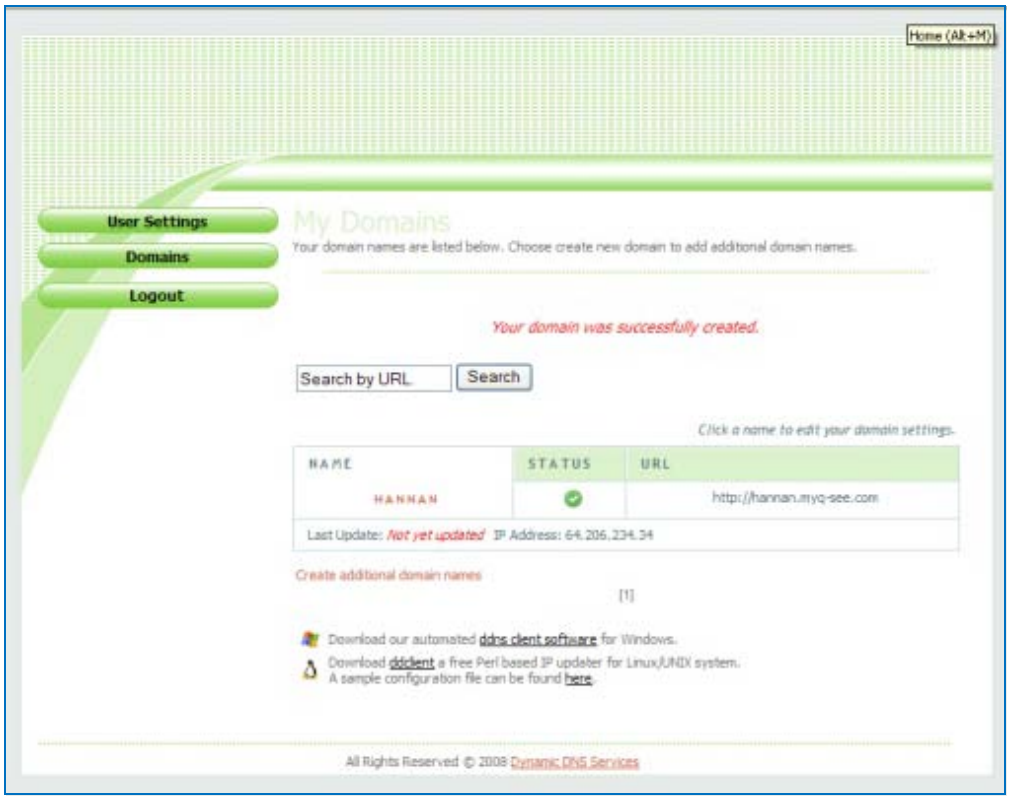

Home (Alt+M)
User Settings
Domains
Logout
My Domains
Your domain names are listed below. Choose create new domain to add additional domain names.
Your domain was successfully created.
Search by URL
Search
Click a name to edit your domain settings.
NAME
STATUS
URL
HANNAN
http://hannan.myq-see.com
Last Update: Not yet updated IP Address: 64.206.234.34
Create additional domain names
[1]
Download our automated ddns client software for Windows.
Download ddclient a free Perl based IP updater for Linux/UNIX system.
A sample configuration file can be found here.
All Rights Reserved © 2008 Dynamic DNS Services

Fig 7-9 Domain Name

e. Once you have completed steps a-d, go to the Main Menu and select the Setup icon (Red box in Fig 7-10), then select the Network icon (Red box in Fig 7-11), this will display the NETWORK screen shown in Fig 7-12.

Fig 7-10 Main Menu

Fig 7-11 Setup

f. Put a checkmark in the DDNS option (Red Box in Fig 7-12), then select the MYQ-SEE option from the drop down box, and enter the account information you setup on the myq-see.com site into the boxes under the drop down box (see Fig 7-13).

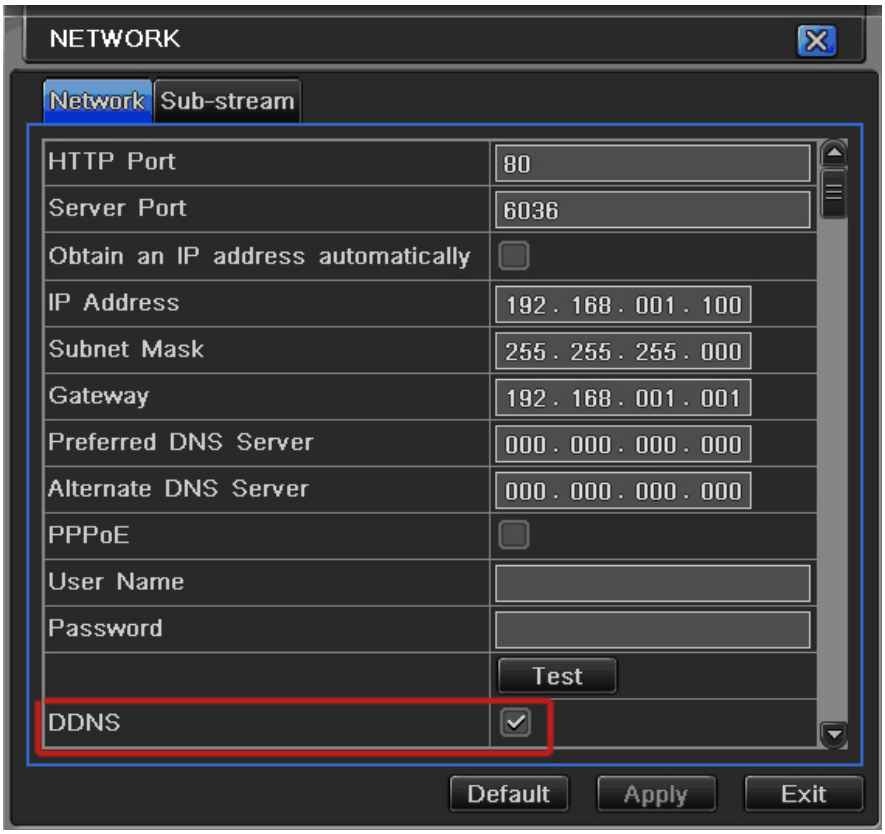


Fig 7-12 DDNS

g. After you enter the information click on the Test button (Green box in Fig 7-13) and wait until you see the OK message in the bottom left hand corner of the screen.

h. Click the [APPLY] button and then the [EXIT] button at the bottom of the NETWORK screen and your DDNS setup is complete.

Fig 7-13 myq-see

- DDNS Server: Select MYQ-SEE from the drop down menu.
- Username: The email address you entered on the myq-see site.
- Password: Enter the password you setup on the myq-see site.
- Host Domain: Enter the account name you setup on the myq-see site.

7.3 Port Forwarding

To access the DVR from a remote computer over the internet you would then need to forward port 80 and 6036 on the router the DVR is attached to, to the IP address of the DVR. You can get instructions on how to do this for most popular routers by going to the www.portforward.com website. On this website click on the orange “Routers” link in the second paragraph (RED box in Fig 7-14), which will open a list of router manufactures, then find the brand and model of your router on the list and click on the link. On the next page that opens click on the orange “Default Guide” link (BLUE box in Fig 7-15), this will take you to the port forwarding instructions for your router.

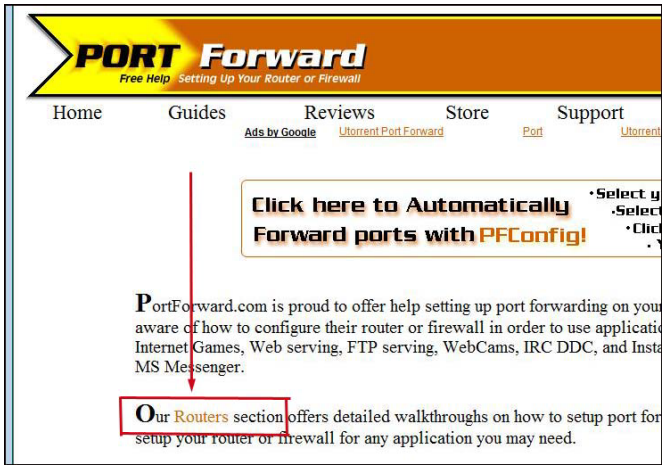

PORT Forward
Free Help Setting Up Your Router or Firewall
Home
Guides
Reviews
Store
Support
Click here to Automatically
Forward ports with PFConfig!
Our Routers section offers detailed walkthroughs on how to setup port for
setup your router or firewall for any application you may need.

Fig 7-14 Router Link

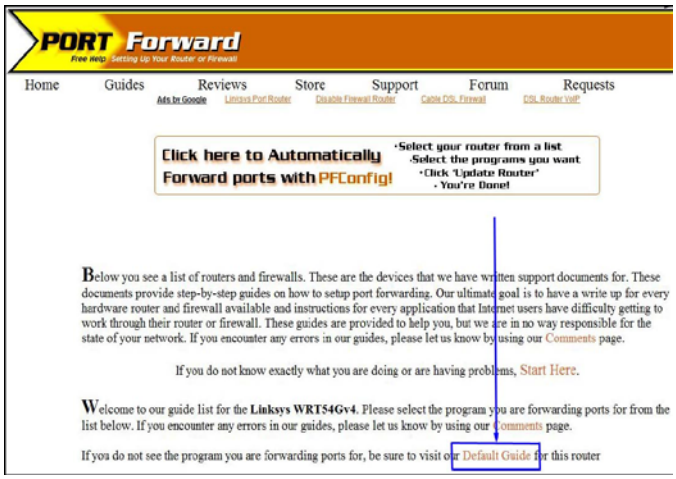

PORT Forward
Home
Guides
Reviews
Store
Support
Forum
Requests
Click here to Automatically
Forward ports with PFConfig!
·Select your router from a list
·Select the programs you want
·Click 'Update Router'
·You're Done!
Below you see a list of routers and firewalls. These are the devices that we have written support documents for. These documents provide step-by-step guides on how to setup port forwarding. Our ultimate goal is to have a write up for every hardware router and firewall available and instructions for every application that Internet users have difficulty getting to work through their router or firewall. These guides are provided to help you, but we are in no way responsible for the state of your network. If you encounter any errors in our guides, please let us know by using our Comments page.
If you do not know exactly what you are doing or are having problems, Start Here.
Welcome to our guide list for the Linksys WRT54Gv4. Please select the program you are forwarding ports for from the list below. If you encounter any errors in our guides, please let us know by using our Comments page.
If you do not see the program you are forwarding ports for, be sure to visit our Default Guide for this router

Fig 7-15 Default Setup Link

When you access the DVR from a remote computer you also need to use a different address in the Internet Explorer browser window. Instead of entering the IP address of the DVR you need to enter the public IP address of the router the DVR is attached to. You can get this address by going to www.myipaddress.com from a computer that is attached to the same router as the DVR. This website will display the box in Fig 7-16 below that shows the IP address you need to use. It will be in the space where the below example shows 76.254.183.54.

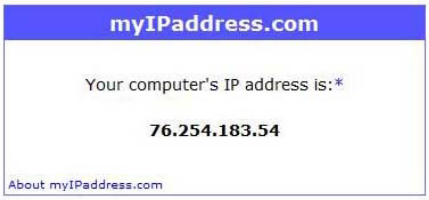


Fig 7-16 myipaddress.com

7.4 Setting Up Internet Explorer

To access the DVR through Internet Explorer: once you have setup the network settings on the DVR to match the settings of your router and forwarded the ports needed by the DVR (for remote access over the internet), you need to modify your browser controls. You need to allow Pop-ups. To do so go to the Internet Explorer tool bar and select the "tools" option (RED box in Fig 7-16), then select the "Pop up Blocker" option and select "Turn Off Pop-up Blocker" (BLUE arrows in Fig 7-16). You will also need to enable Active X controls. To do so go to the Internet Explorer tool bar and select the "tools" option, then "Internet Options" (GREEN arrow in Fig 7-16), In the windows that opens (Fig 7-17) Go to "Security" (RED box in Fig 7-17), then click the "Custom Level" button (GREEN box in Fig 7-17), then click on OK (BLUE arrow in Fig 7-17). This will open the page shown in Fig 7-18. On this page scroll down to the ActiveX Controls and Plug Ins and make sure they are all set to either prompt (RED arrows) or enabled (BLUE arrows).

Fig 7-16 Internet Options

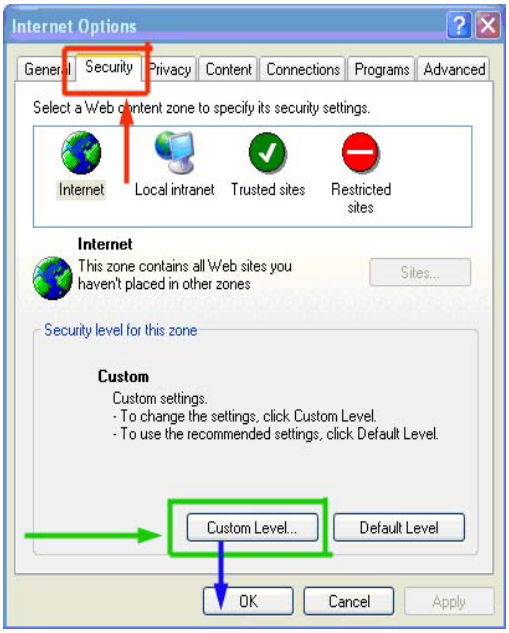


Fig 7-17 Security Settings

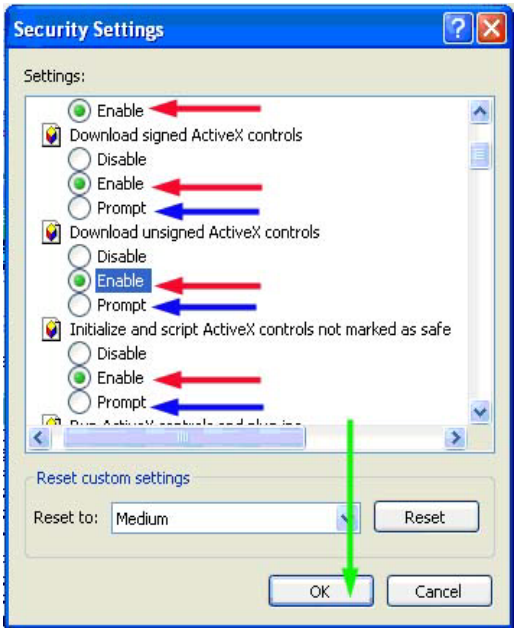


Fig 7-18 Enable ActiveX

To connect to the DVR from the remote computer you would then open an Internet Explorer browser window and enter the internet IP of your router that you got by going to www.myipaddress.com.

Notice: Once you have forwarded the ports you can go to canyouseeme.org to verify that the ports are open. If you cannot use HTTP port 80 because it is being used by another program, or it is being blocked by your service provider, you can use another port in the same range such as 83, 85, 89, etc. If you do so then you need to forward the IP address of the router to the other port, change the port in the DVR NETWORK settings and you need to add the port number after the IP address. For example, if you set the HTTP port as 83, you need to enter the IP address as 192.168.0.25:83.

User name and password here are the same as what you set up on the DVR.

If you get a error message that says the program cannot load because the publisher is unknown or the program is unsigned, go to internet explorer, tools, internet options (refer to Fig 7-16), then go to the "Advanced" tab (RED box in Fig 7-19), this will open the window in Fig 7-20, scroll down to "Security", and select the options to "Allow software to run or install even if the signature is invalid", and "Allow Active Content to Run Files on My Computer" (RED box in Fig 7-20).

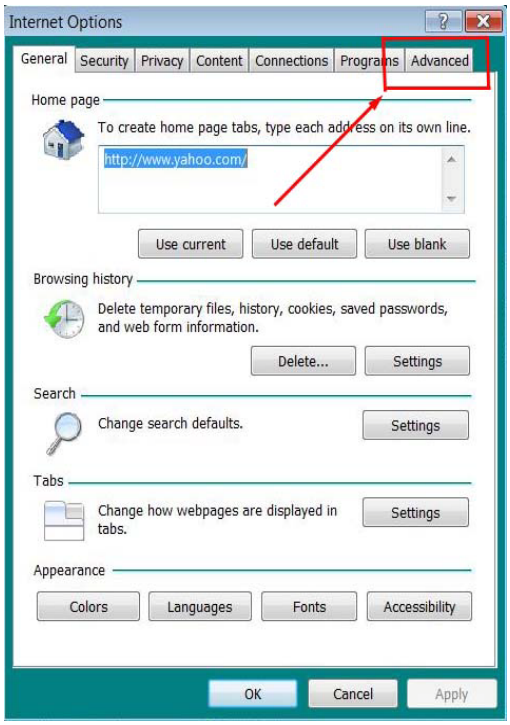


Fig 7-19 Advanced Options

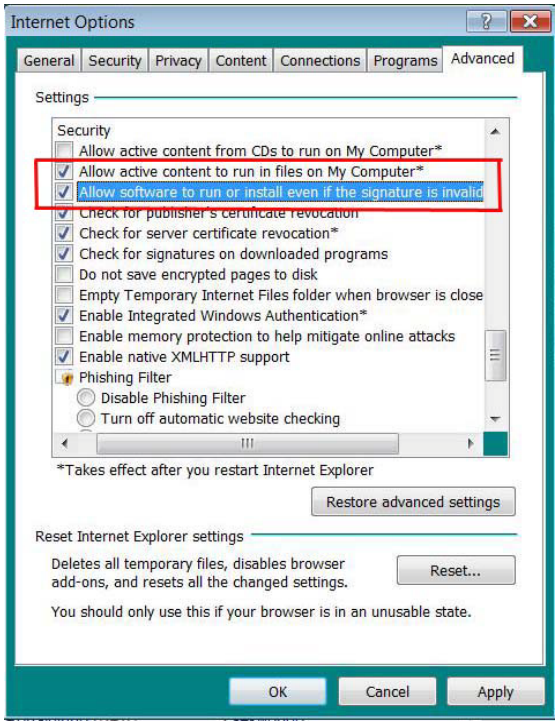

Internet Options
General
Security
Privacy
Content
Connections
Programs
Advanced
Settings
Security
Allow active content from CDs to run on My Computer*
Allow active content to run in files on My Computer*
Allow software to run or install even if the signature is invalid
Check for publisher's certificate revocation
Check for server certificate revocation*
Check for signatures on downloaded programs
Do not save encrypted pages to disk
Empty Temporary Internet Files folder when browser is close
Enable Integrated Windows Authentication*
Enable memory protection to help mitigate online attacks
Enable native XMLHTTP support
Phishing Filter
Disable Phishing Filter
Turn off automatic website checking
*Takes effect after you restart Internet Explorer
Restore advanced settings
Reset Internet Explorer settings
Deletes all temporary files, disables browser add-ons, and resets all the changed settings.
Reset...
You should only use this if your browser is in an unusable state.
OK
Cancel
Apply

Fig 7-20 Enable Unknown Publisher

NOTE: On many systems you many have another option. You can go into internet options in Internet Explorer, enter the IP address you use to access the DVR as a trusted site, then go to the default level button and set move the bar down to the low setting, click apply and ok. Do not select the option to enable protected mode or require server verification.

7.5 Using the Remote Access Software

Once you have setup Internet Explorer you can access the DVR through a browser window. If you are accessing the DVR over the network you would enter the IP address of the DVR into the address bar. If you are accessing the DVR from a remote computer you will enter the public IP address of the router. This is the address you get by going to www.myipaddress from a computer attached to the same router as the DVR. When you connect to the DVR you will be prompted to download a webcam program to access the cameras. When the download is complete you will see a login window to access the DVR. After you put in the password information you will see the following screen:

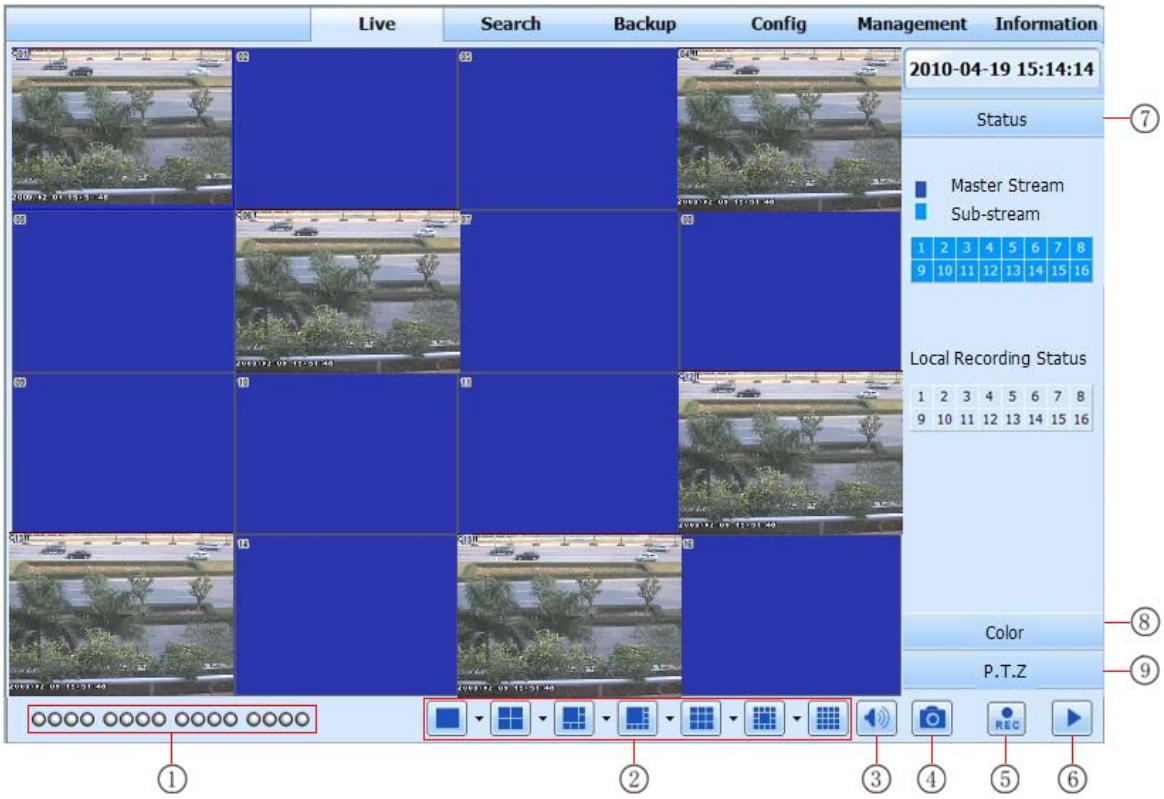


Fig 7-21 Remote Live Preview Interface

Symbol and Function Definitions:

①	Channel Indicator	②	Screen Display Mode	③	Volume
④	Snapping Picture	⑤	Start Record	⑥	Playback
⑦	Master/Substream Status	⑧	Color Adjustment	⑨	PTZ Control

Note: click **button to record manually and the recorded file will be saved on your PC hard drive.**
Screen display mode:

Click the icon beside the screen display mode, channel select dialog will appear as shown below:

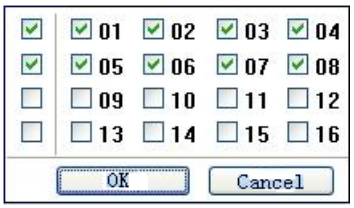


Fig 7-22 Channel Select Dialog

User can checkmark channels form 1-ch to 16-ch at random to display the live pictures. Then click OK button to confirm the setting.

Snap Pictures

1. Click “Snap” icon, select the number of pictures, refer to Fig 7-23:

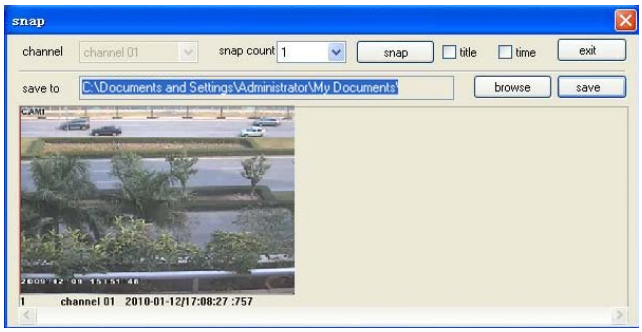


Fig 7-23 Single Snap

2. User can take multiple pictures , select the picture number from snap count pull down list box, such as 3, checkmark “Title” and “Time”, it will show capture title and time on the snap pictures simultaneously. Refer to Fig 7-24:

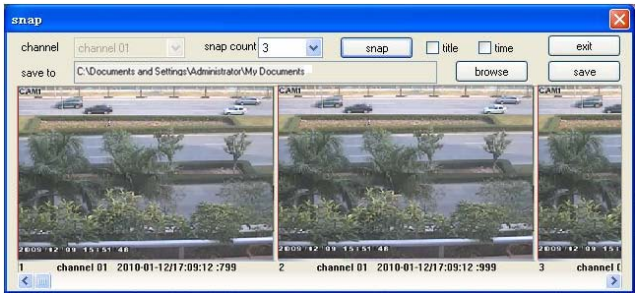
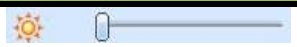
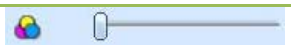
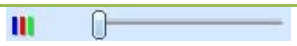
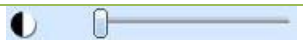


Fig 7-24 Multi-Picture Snap

3. Click “Browse” to set saving path; Click “Save” to save pictures to HDD on the computer; click Exit button to exit current interface.

Color Adjustment:

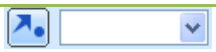
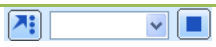
Drag the slide bar to adjust Brightness, Contrast, Hue, and Saturation. Click Default to reset them to original value.

BUTTON	DESCRIPTION
	Drag the scroll bar to adjust the brightness of channel
	Drag the scroll bar to adjust the contrast of channel
	Drag the scroll bar to adjust the saturation of channel
	Drag the scroll bar to adjust the hue of channel
	Click this button to recover the default value of brightness, contrast, saturation and hue.
	Save the adjustment

PTZ Control

Connect the PTZ speed dome to the device via RS485. Ensure the protocol of the speed dome is supported by the device and set the relative parameters manually. User can control the dome up, down, right, left or stop rotating in Control Center, adjust rotation speed, Iris and zoom, focus on the dome, and set the presets, etc.

Buttons definition:

BUTTON	DESCRIPTION
	move the dome up. move the dome up and left. move the dome up and right move dome down. move the dome left and down. move the dome right and down. move the dome to the left. move the dome to the right. store the dome rotating.
	Drag the scroll bar to adjust rotating speed of the dome.
	'Iris' button. Click button near 'Iris' button to increase light of the dome image. Click button near 'Iris' button to decrease light of the dome image.
	'Zoom' button. Click button near 'Zoom' button to zoom in on the picture of this camera. Click button near 'Zoom' button to zoom out on the picture of this camera.
	'Focus' button. Click button near 'Focus' button to focus further away. Click button near 'Focus' button to focus closer.
	Go to the Preset
	Select and do auto cruise
	Track
	Auto scan

Right click the mouse on the live interface to generate a pull-down menu as shown below:

Fig 7-25 Right Key Sub Menu

Stream: this DVR supports master stream and sub stream. Master stream has higher frame rate, max 25FPS (PAL)/ 30FPS (NTSC) for every channel. However, to ensure optimal function, an increased network bandwidth is highly recommended. Sub-Stream bandwidth supports low frame rate: 6FPS (PAL)/7FPS (NTSC) for every channel.

All to master/sub stream: Sets all channels to master stream or sub stream.
Enable Audio: Enable or disable audio
Full Stream: The live preview picture will display full screen, the tool bar will be hidden; double click left mouse or **click right mouse to return**

7.6 Remote Playback and Backup

7.6.1 Remote Playback

Click button to enter into record playback interface, refer to Fig 7-26:
Select the record date and channels; double-click the file name in the record file list box, user can play that file and preview the picture.

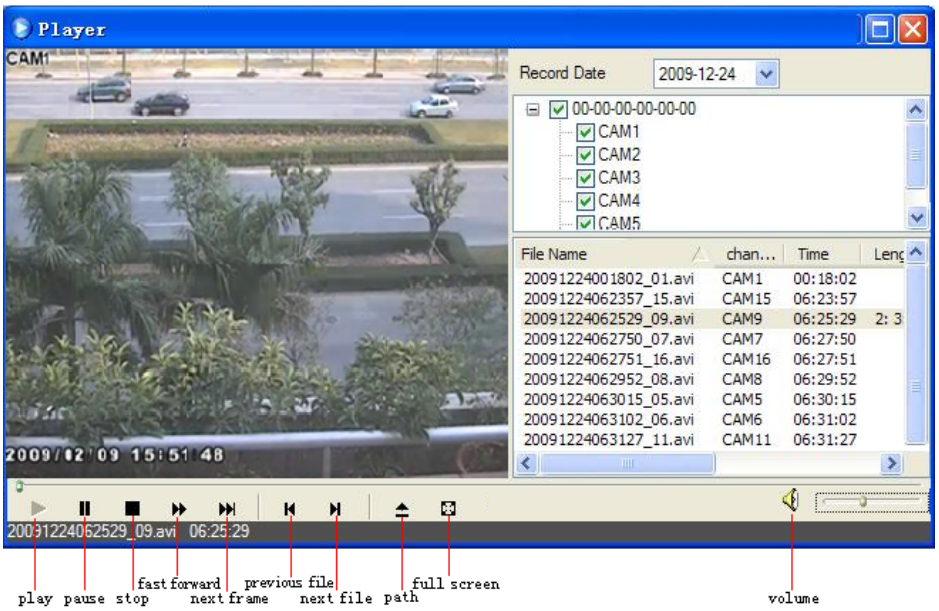


Fig 7-26 Play Record File Interface

This DVR supports remote time search, event search and file management.

By Time Search:

Step 1: Enter into Search→time search; refer to Fig 7-27:

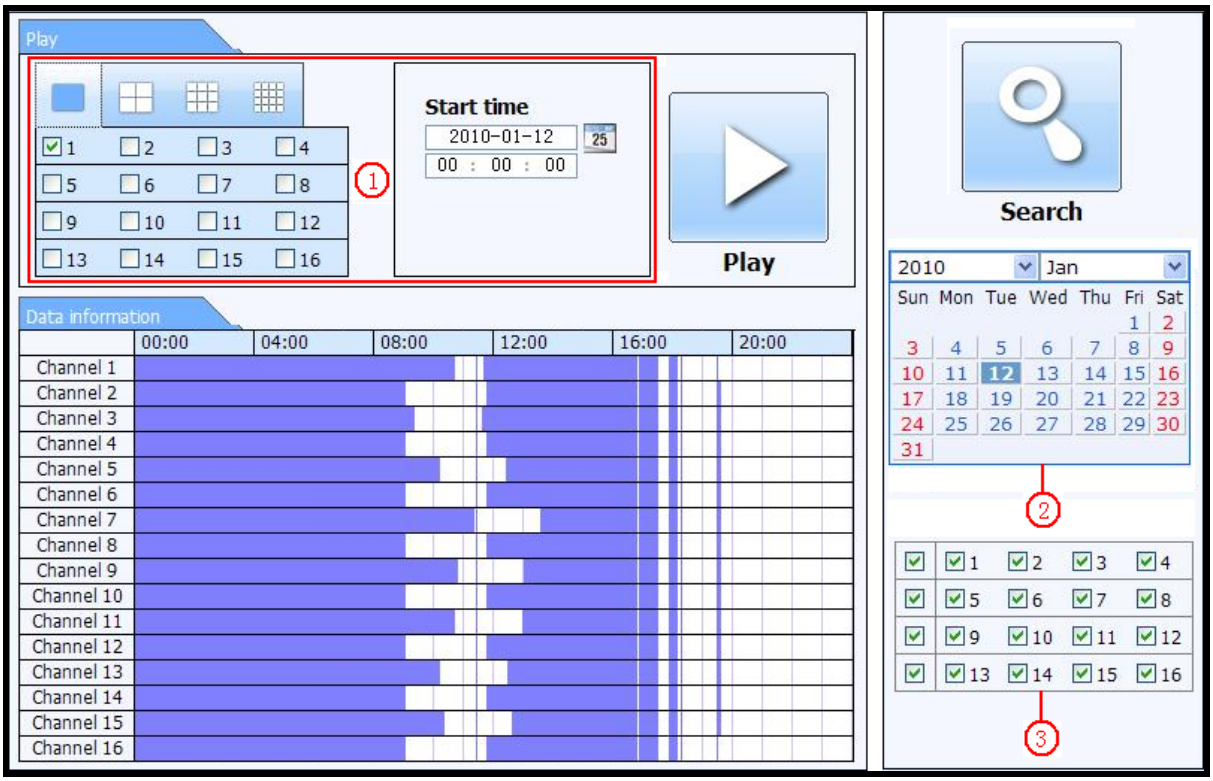


Fig 7-27 Time Search Interface

Step 2: Click “Search” button. The record data will be displayed in the data information list box. The highlight date in the area marked ② means there is recorded data for that channel at that time. Select the record channels in the area marked ③.

Step 3: User can set the data playing time and display mode in area ① as required

Step 4: Select an item from the data information list box, click “play” button to playback

Step 5: Click the relevant buttons in the interface; user can do operations such as: FF, pause, change channel mode, research, etc. Refer to Fig 7-28:

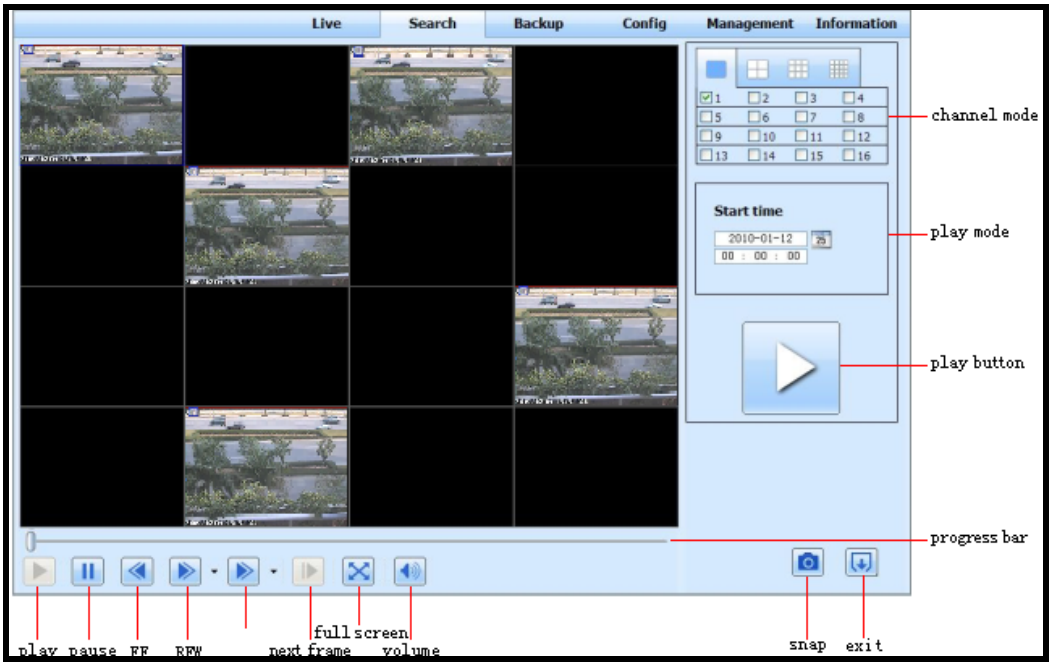


Fig 7-28 Time Search Playback

By Event Search:

Step 1: Enter into Search→event search; refer to Fig 7-29:

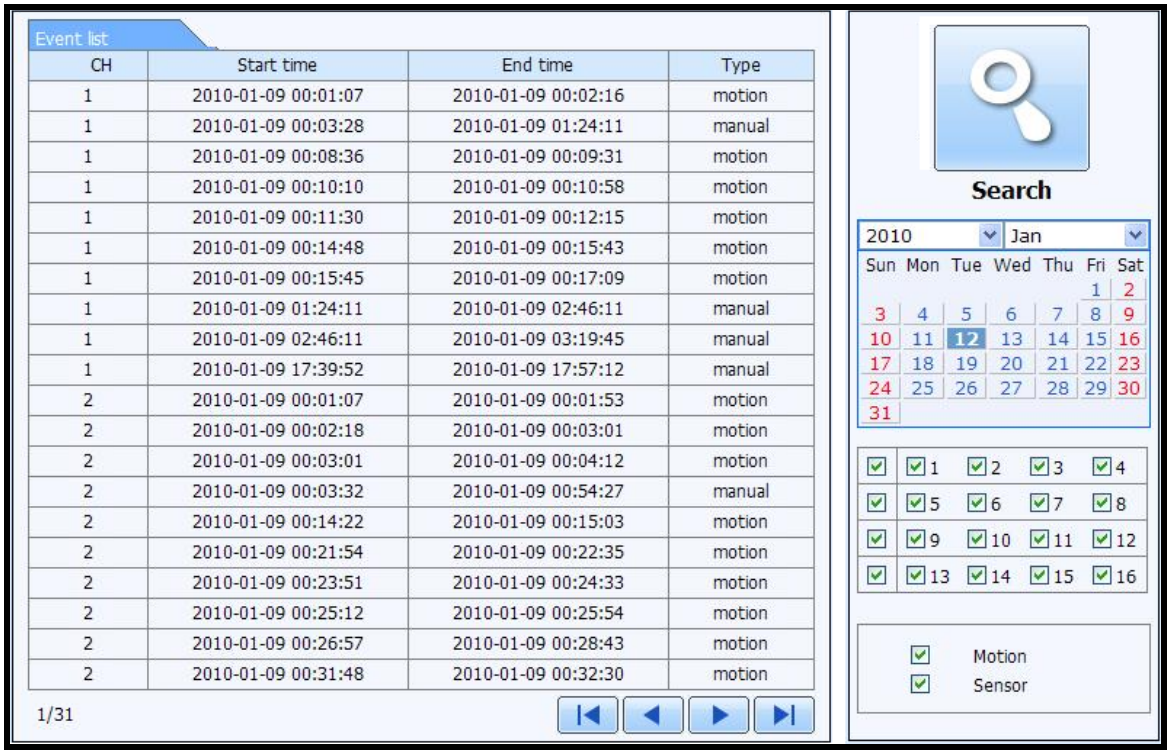


Fig 7-29 Event Search Interface

Step 2: Click the highlight date and select record channels and then checkmark the event type: motion and sensor, click “search” button

Step 3: The events will be display in the event list box, double-click an item to playback

File Management

Step 1: Enter into Search→file management; refer to Fig 7-30:

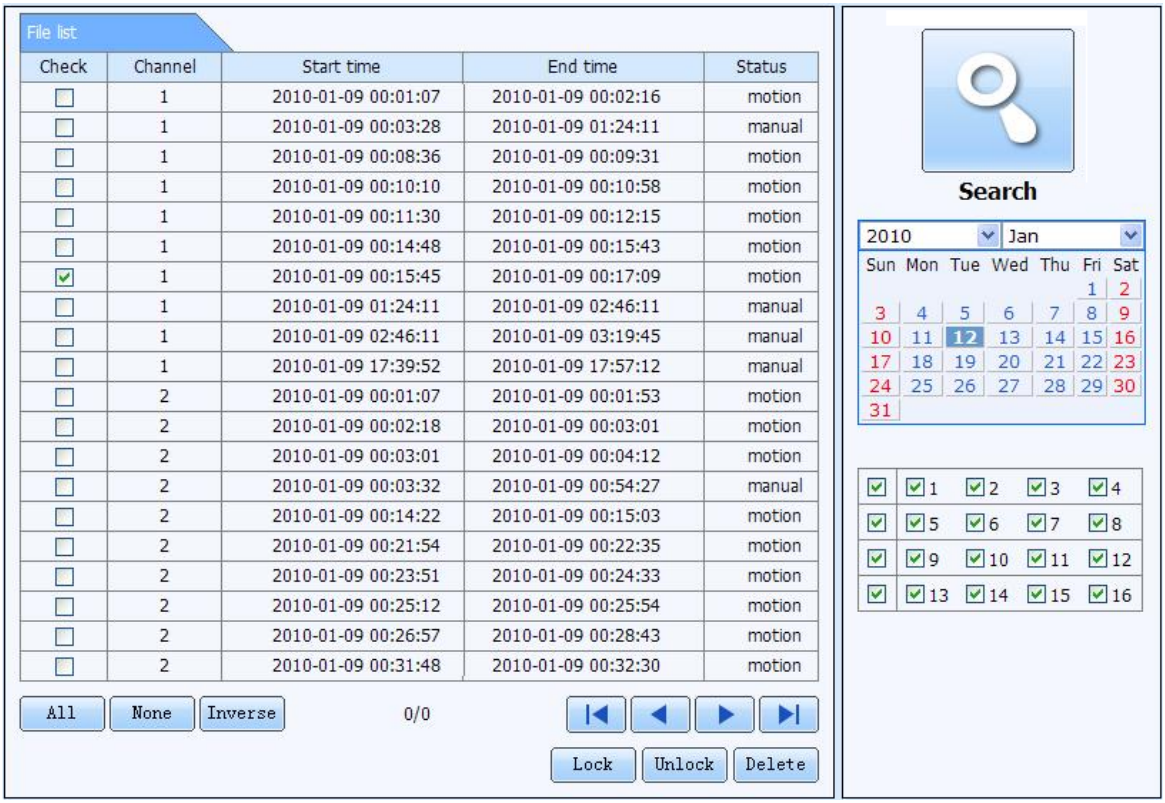


Fig 7-30 File Management Interface

Lock: select a file in the file list box, click “Lock” button to lock this file so it can’t be deleted or overwritten (unless hard drive is formatted).
Unlock: select a locked file, click “unlock” button to unlock this file
Delete: select an unlock file, click “delete” button to delete this file from file list

7.6.2 Remote Backup

Click Backup button to enter into backup interface, refer to Fig 7-31:

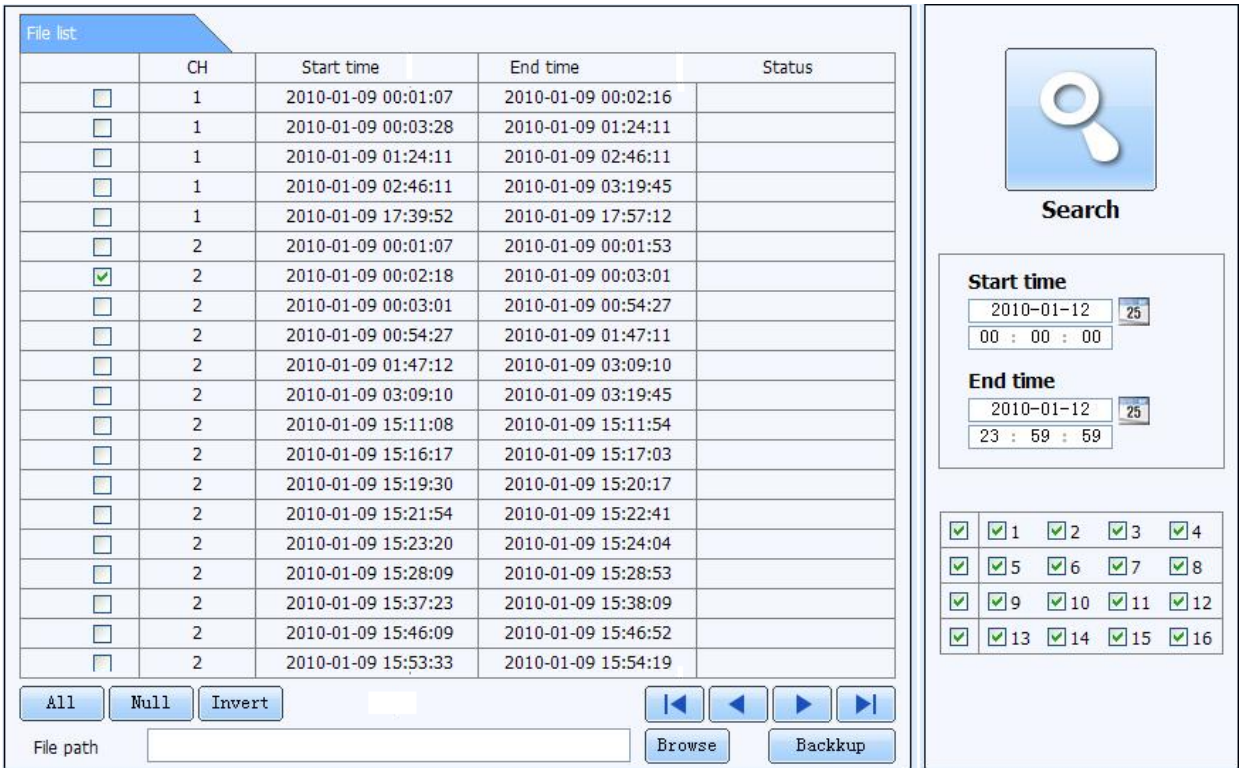


Fig 7-31 Remote Backup Interface

Step 1: Select channels, set the start and end time, then click “search’ button, the file information will be displayed in the file list box

Step 2: Select backup files, click “browse” button to set the save path, and then click “backup” button to start backup. The backup files will be saved on user’s PC.

7.7 Remote System Configuration

User can remotely setup the parameters of the device. Functions of remote configuration include: basic configuration, live configuration, record configuration, schedule configuration, alarm configuration, network configuration, PTZ configuration and user configuration. User should first select an item in the menu list on the left, and then setup the relative parameters. While one user is setting up parameters of a certain item, others cannot set it up.

Click Config to enter into the below interface refer to Fig 7-32:

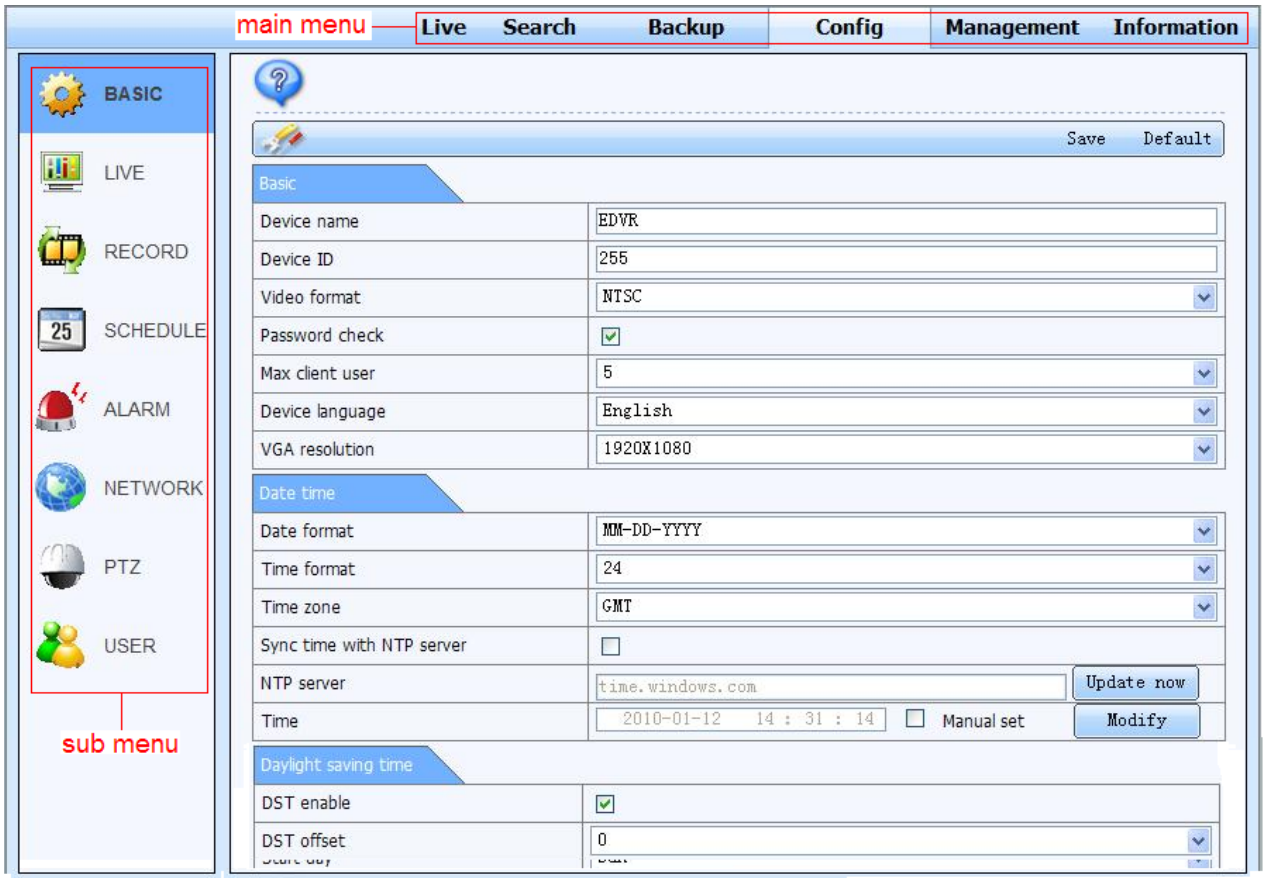


Fig 7-32 Remote Menu Setup

The sub menu lists and the options in every item are similar to those on the DVR. Please refer to Chapter 3 Main Menu Setup Guide for more details.

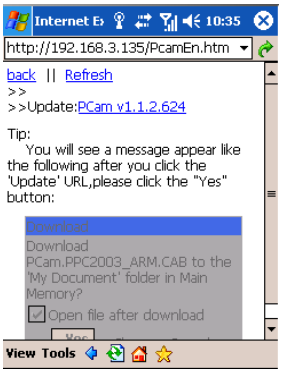
Click “save” button to save above settings; click “default” button will recover the original settings.

8. MOBILE SURVEILLANCE

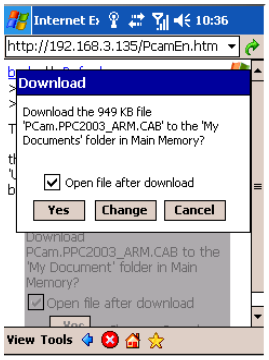
This DVR supports mobile surveillance by Iphone, or smart phones with Windows Mobile Pro and symbian OS on 3G networks. We tested on Window Mobile Pro 6.1 and 6.5. To access the DVR from a mobile phone you first need to setup the network configuration on the DVR, refer to Chapter 4.6 Network configuration. Below are instructions for accessing the DVR from phones running Windows Mobile Pro, Symbian, and iPhones.

8.1 Phones with Windows Mobile Pro

Step 1 : First you will need to activate network access on the mobile phone and then run “Internet Explorer”. Input the DVR’s IP address and then setup the connection as shown below:

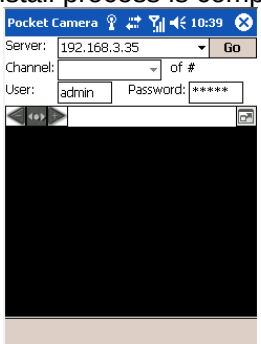

Internet Ex 10:35
http://192.168.3.135/PcamEn.htm
back || Refresh
>>
>>Update:PCam v1.1.2.624
Tip:
You will see a message appear like the following after you click the 'Update' URL,please click the "Yes" button:
Download
Download PCam.PPC2003_ARM.CAB to the 'My Document' folder in Main Memory?
Open file after download
View Tools

Step 2 : Click on the software name. A dialog box pops up:

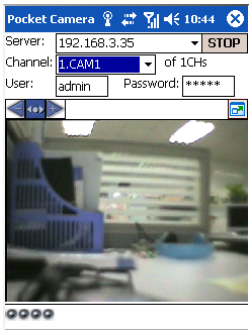


Step 3 : Click “Yes” to start downloading and installing:

Step 4 : PCam will open automatically once the install process is complete.



Step 5 : Input the DVR's address, ID and password respectively in the columns of "Server", "User" and "Password", and click "Go" to log on the DVR. It will show the picture if accessed successfully.



Step 6 : Camera 1 is the default channel after login. Change the channel in the drop down menu of "Channel":

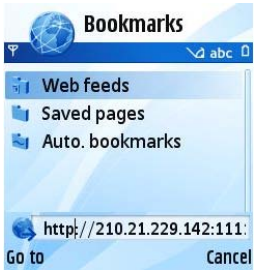
Notice*: User name and password here are the same as that used on the DVR. The default is admin and 123456.*

8.2 Phones with Symbian

Please use the smart phones with Symbian versions supported by this unit.

Step 1 : First enable the network access on the mobile phone. Then run Web browser.

Step 2 : Input the DVR's IP address in a new-built bookmark. Click this bookmark to connect to the DVR.



Step 3 : A welcome window will pop up and requires a package. Click the software name to download

Step 4 : A security window will pop up after downloading and ask if you want to install the package. Click YES to install.

Step 5 : A Scam shortcut icon appears on the system menu after finished.

Step 6 : Run Scam program. It will display a function interface.

Live view: to do mobile live view
Image view: to check the pictures snapped in live view
System setting: Login setting and Alarm setting.
Help: function indication and help

Step 7：Click System setting--->Login Setting to enter login interface.

Step 8：Input the DVR's address, ID and password respectively. Then save.

Notice*: About Access point, there may be different access points in different countries or from service providers.*

Step 9：Enter Live View, it will connect to the server and display pictures.

Notice*: User name and password here are the same with that used on the DVR. The default is admin and 123456.*

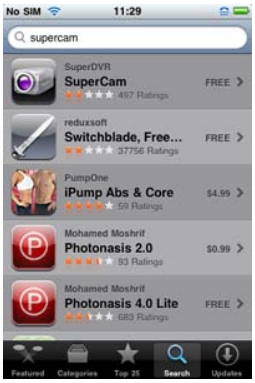
Step 10：In Live View, users can do snapshot, change channels and control PTZ cameras.

8.3 For iPhone Mobile Clients

At present, the software only supports versions of iPhone OS 2.2 and above, If your iPhone firmware is lower, please upgrade it. Below is the setup method for iPhone mobile clients:

Step 1 : Enter into App Store function of iPhone

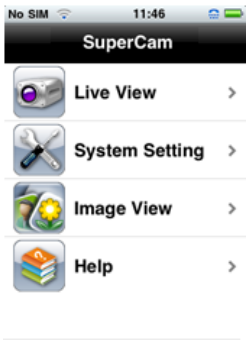
Step 2: Enable "search" function to search for "SuperCam", the required program will be displayed on the top of search box



Step 3: Click SuperCam, enter into "introduce" interface and click FREE", it will change into "INSTALL"

Step 4: Enter your iTunes Store password, click “OK”will display below interface
Note: the first time you operate please enter your user ID; if you do not have a Store account, you need to setup one.

Step 5: Download and install. After installed, SuperCam icon will display. Click this icon, a function interface will appear



Step 6: Click “System setting, enter into login interface. Enter DVR’s IP address (or domain name), user’s ID and password. Click Back to save.

Step 7: Click Live View, the default Cam1 picture will be displayed. Click to capture picture.

Step 8: On function interface, click Image View to view the captured picture. Click or to switch to next or previous picture. Click to delete the current picture.

iPhone help

Pic1 Pic2 Pic3

Live View

After successfully installing SuperCam software, Click on System Setting (Pic 1), and then input DVR's IP address or Domain name, User name and password to log in (Pic 2). If connected successfully, it will go to Live View of CH1 as default (Pic 3), please choose other desired channels from channel button underneath. Below is a table of functions:

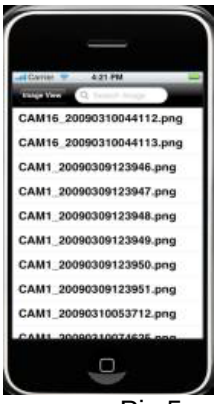
1. : Switch channels 2. : Picture snap. 3. : PTZ control (if server camera is PTZ Camera only) (pic4)

PTZ Control buttons:

Item	Buttons	Explanations
1		pan
2	ZOOM	Zoom in Zoom out
3	FOCUS	Long Focus Short Focus
4	IRIS	Lighter Darker
5		return to live

Image View

Pic 4



Pic 5

Item	Button	Function	Item	Button	Function
1		Previous picture	2		Next Picture
3		The first Picture	4		The last picture
5		Delete	6		Search Pictures, search page as Pic 5

9. PRODUCT SPECIFICATIONS

ITEM	DEVICE PARAMETER	SPECIFICATION
COMPRESSION	**COMPRESSION FORMAT**	Standard H.264 Baseline
VIDEO	**VIDEO IN**	COMPOSITE 1.0V p-p/75Ω, BNC x 16
	VIDEO OUT	COMPOSITE 1.0V p-p/75Ω, BNC x 2, VGA x 1
	VGA RESOLUTION	1280*1024/ 1024*768/ 800*600
	RECORD RESOLUTION	352*288/704*576 (PAL) 352*240/704*480 (NTSC)
	DISPLAY FRAME RATE	400FPS (PAL) 480FPS(NTSC)
	RECORD FRAME RATE	400FPS/100FPS (PAL) 480FPS/120FPS (NTSC)
AUDIO	**AUDIO INPUT**	-8Db~22k, RCA x 4
	AUDIO OUTPUT	-8Db~92Db, RCA x 1
ALARM	**ALARM INPUT**	NO or NC 16CH
	ALARM OUTPUT	1CH
STORAGE	**RECORD MODE**	Manual/Sensor/Timer/Motion Detection
	SIMPLEX/DUPLEX/TRIPLEX	Pentaplex
INTERFACE	**NETWORK INTERFACE**	RJ45 (LAN, Internet)
	COMMUNICATION INTERFACE	RS485, USB 2.0 x 2 (One for Backup, Another for USB Mouse)
CONTROLS	**PTZ CONTROL**	Yes
	REMOTE CONTROL	Yes
DISK INFO	**DISK TYPE**	SATA x 1 (up to 2TB)
OTHER INFO	**VOLTAGE**	12V3A
	WORKING TEMPERATURE	14°F to 131°F (-10°C to 55°C)/ 10% to 90%

APPENDIX A: FAQ's

1. The DVR does not start after connecting the power, what is wrong?

a. The power adapter may have been damaged, or is not providing enough power. Please change the adapter.
b. The DVR may not be getting enough power from the outlet or surge protector it is attached to.
c. There could be a problem with the system board on the DVR

2. The indicator lights of the DVR are on, but no output. Why?

a. The power adapter may have been damaged, or is not providing enough power. Please change the adapter
b. The video format of the DVR is different from that of the monitor.
c. Connection problem. Please check the cable and the ports of the monitor and DVR.

3. Why are no images displayed on some or all of the channels of the DVR?

a. Connection problem. Please check the cables and the ports of camera and DVR.
b. Camera problem. Please check the cameras by attaching them directly to TV or working port on DVR.
c. The video format (NTSC/PAL) of the DVR is different from that of the cameras. Please change DVR video format.

4. Cannot find HDD

a. The power adapter is not providing enough power, or the adapter is not getting enough power from the outlet
b. Connection problem. Please check the power and data cables on the HDD.
c. The HDD is damaged. Try a new one.

5. I can not record, what could be the problem?

a. HDD is not formatted. Please format it manually first.
b. The record function is not enabled or setup correctly. Please refer to 3.3 Recording.
c. HDD is full and recycle function is not enabled. Please refer to 4.3.4 Recycle Recording.
d. The HDD is damaged. Try a new one.

6. I can not use the mouse, what could be the problem?

a. Wait 5 minutes after mouse connected and then try.
b. Mouse is not securely connected. Plug/unplug several times.
c. The mouse is incompatible with the system. Please try another mouse.

7 What can I do when the DVR starts and displays "please wait……"all the time?

a. First possible reason: hard drive power cable and/or data cable are not securely connected.
Solution: Please check the cable connections and make sure they are secure; if still not working, please unplug them and then plug them in again.
b. Second possible reason: The system is having problems reading the hard drive.
Solution: Try reformatting the current drive or re-placing it.

8. Why isn't the mouse I have plugged into the front USB port working?

The front USB port is only for backup to USB flash drive, and does not support a USB mouse. Please use the USB port on the rear panel if using a mouse.

9. How do I input password and digital numbers?

To input password and digital numbers click the box behind *password* or *items* where you need to input numbers, and then a small keyboard will appear. Please select number or letter to input (the default password is 123456), or you can use the digital keys on the front panel, or the digital keys on the remote control.

10. How do I upgrade the firmware on the DVR?

After you download the new firmware from the Q-See website at www.q-see.com, copy it onto a USB flash drive. Then select "*upgrade*" in the menu.

Notice: **Do not turn the system power off during the upgrade process! Doing so may damage the chipset and prevent the DVR from starting.**

11. I can get a live image on the display but I can't get the menu to display. How can I pull up the menu?

Hold down the ESC key to wait for login dialog box to appear.

12. I hooked up the DVR to a TV through the BNC video out port and I do not see anything on the screen. How do I get the video to display?

By default the DVR is setup to use a VGA monitor, if you want to use a TV instead then push the ESC button on the front panel and hold it until you hear a beep, if you still do not get a display then hold the ESC button down again until you hear a beep, the display should come up.

13. What are the minimum configurations of PC for clients connecting remotely?

PC MODULE	PARAMATERS
CPU	Intel Celeron 2.4G
MOTHERBOARD	Intel 845
HDD	80G
RAM	512M
VGA	NVIDIA GeForce MX440/FX5200 ATIRADEON 7500/X300
OS	Windows 2000(SP4 above) /Windows XP(SP2 above) /VISTA/Win7
DIRECTX	9.0

14. What are the PC configurations for 16-ch real time access with fully open mainstream channel?

PC MODULE	PARAMATERS
CPU	Intel Core(TM)2 Duo CPU E4600
MOTHERBOARD	G41/P41 chip
HDD	80G
RAM	1GB
VGA	GMA3100/NVIDIA GeForce 8400/ ATI RADEON HD3450
OS	Windows 2000(SP4 above) /Windows XP(SP2 above)/ VISTA/Win7
DIRECTX	9.0

APPENDIX B: CALCULATE RECORDING CAPACITY

Users can calculate the hard drive size needed according to the time saving specification and DVR recording settings listed below. Below is an estimated table outlining hard drive space used when the DVR is configured at various settings.

VIDEO FORMAT	RESOLUTION	FRAME RATE (FPS)	VIDEO QUALITY	BIT RATE (kbps)	SPACE USED (MB/h)
NTSC	**CIF**	30	Highest	1M	465
			Higher	768k	297
			Medium	512k	230
			Low	384k	173
			Lower	256k	115
			Lowest	128k	56
PAL	**CIF**	25	Highest	1M	466
			Higher	768k	295
			Medium	512k	235
			Low	384k	175
			Lower	256k	56.4
			Lowest	128k	45

The calculation format is:

Total Recording capacity =Used space per hour (MB/h) (coverage rate of hard drive) × recording time (hour) ×channel numbers

For instance, one customer uses NTSC cameras, set resolution to CIF, video quality to Lowest, frame rate to 30 fps for enabling total 16 channels. He wants the unit to record continuously for a month. Below is the calculation:

Total Recoding capacity =56 (mb/h) X 24(hours/day) X30(days) X16(channels)

= 645120(MB)≈650(GB)

Therefore, customers who install only one SATA HD with 750GB can expect to achieve almost one month of recording time.

APPENDIX C: COMPATIBLE USB DRIVES

Compatible USB Drives After Testing

BRAND	CAPACITY
SSK	512MB, 1G, 2GB
NETAC	4GB
KINGSTON	2GB
AIGO	2GB
SMATTER VIDER	1GB
SANDISK	4GB